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VOL. XVII. NO. 8.

APR. 15, 1889.

PEACE ON EARTH & GOOD WILL TOWARD MEN



CLEANING
IN

BEE CULTURE

DEVOTED
TO
BEEKEEPING

& HOME INTERESTS.

MEDINA, OHIO

BY
A. ROOT

TERMS, ONE DOLLAR PER YEAR.

W. FAIRBANKS, DUNELER, CTS.

S. W. Conrad

1889



ENTERED AT THE POSTOFFICE, MEDINA, OHIO, AS SECOND-CLASS MATTER.

YOUNG AMERICA

LAWN MOWER.

The cheapest machine offered anywhere. Many prefer them to one with two drive wheels because they run so easily, and are so light. They are just right for running among the hives. For the ladies who appreciate outdoor exercise you could have nothing better than a 10-inch Young America lawn-mower to keep the grass down on the lawn. We have sold over 200 of them but never before have we offered them so low. Write for prices on quantities if you can use more than one of either kind.



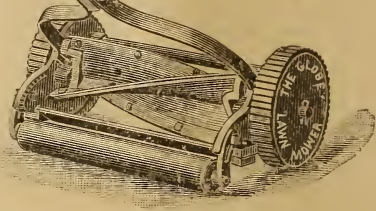
10 IN. \$3.50; 12 IN. \$4.30; 14 IN. \$5.

THE GLOBE LAWN-MOWER.

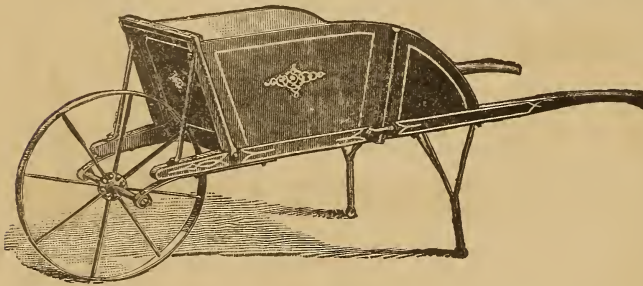
Guaranteed a First-Class Machine. The Globe lawn-mower shown in cut combines all the best features, and is a first-class mower in every respect. Having only three knives it will cut longer grass than those having four. The axle of the drive-wheel does not project, so that you can run close to the hive. It has two drive-wheels and roller, and the driving gears are simply perfect. The prices are very much lower than on any other first-class mower.

TABLE OF PRICES:

	LIST PRICE	OUR PRICE
10 in. Globe....	(\$13.00)...	\$4.90
12 " "	(15.00)....	5.70
14 " "	(17.00)....	6.50
16 " "	(19.00)....	7.20
18 " "	(21.00)....	8.00



OUR DAISY WHEELBARROW.

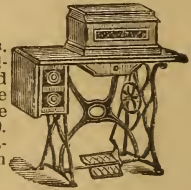


Who has not felt the need of a **Light, Strong, and Durable**, and at the same time **Cheap** wheelbarrow? The cut shows one that combines all these qualities better than any other we have ever seen. We have two sizes—the smaller one weighing only 35 lbs., and yet it will carry 500 lbs. safely, and it can be packed so closely together for shipment that you can take the whole thing under your arm and walk off easily. The wheel has flat spokes instead of round. The legs are steel, so they will neither break nor bend, even if you bump them on the sidewalk.

The springs are oil-tempered with adjustable bearings, so the wheel will always run free. More than all, the wheelbarrows are the nicest job of painting and varnishing, I believe, I ever saw, for a farm implement. They are handsome enough to go around town with, and strong enough to do heavy work; and yet the price of the small size No. 3 is only \$4.00; the larger size No. 2 is \$4.25. Over 200 sold in 8 months.

SINGER SEWING-MACHINE, \$11 TO \$16.

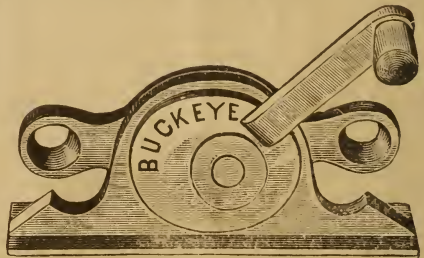
Made from latest models; first class in every respect, and warranted for 5 years. A boon to many an overworked housewife who can not afford to pay the price usually asked by agents. Cut shows No. 3. No. 1 is the same without the cover, leaf, and two drawers. Price \$11.00. No. 2 has a cover, but no leaf or side drawers. Price \$12.50. No. 3, as shown in the cut, price \$14.00. No. 4, same as No. 3, with 2 more drawers to the right. Price \$15.00. No. 5 has 3 drawers on each side. Price \$16.00. Wood parts are oil polished, walnut; balance-wheel is nickel plated, and each machine includes a full set of attachments, with instructions for use. We ship them direct to customers from factory in Chicago.



BUCKEYE SASH-LOCK.

A DEVICE TO FASTEN WINDOWS UP OR DOWN AT ANY POINT.

For many years I have been trying to get something better to hold a window up than a stick or book, or something of that sort; but although we have tried them, even paying as high as 75 cts. per window, I have never had any thing please me so well as the one here shown. This device holds the sash securely by friction in any desired position, as tight as if it were in a vise. It prevents the sash from rattling, and excludes the dust by making tight joints, and yet it does not mar the wood. It is put on with two screws, and can be fitted by an inexperienced hand in three minutes. It works equally well on upper or lower sash, with or without weights. Printed instructions are furnished with each one, as well as screws to fasten them on with, and yet the price is only 5 cts.; 1 doz. for 50 cts.; 100 for \$4.00. If wanted by mail, add 3 cts. each extra. The above are japanned.



A. I. ROOT, Medina, Ohio.

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THOROUGHbred White P. Rock, W. Wyandotte eggs, \$1.50 per 13; L. Brahma, P. Rock, L. Wyandotte, W. and B. Leghorn eggs, \$1.00 per 13. **Italian Queens**, reared on the Doolittle plan, select tested, in May, \$3.00; June, \$2.50. War-ranted, May, \$1.25; June, \$1.00.

C. H. WATSON,
7-124b Newtown, Bucks Co., Pa.
In responding to this advertisement mention GLEANINGS.

FOR SALE.

Fifty colonies of Italian bees in 10-frame Langstroth hives, at \$5.00 per stand; 10 per cent off for more than one stand.

JOHN GRAND,
7-11db Batavia, Clermont Co., O.
In responding to this advertisement mention GLEANINGS.

BEE HAT AND VEILS.

Most people who handle bees wear some kind of a veil, or bee-hat, as some call 'em. Above we show the rig we prefer. The hat is one we have sold and recommended for two years, and have used for five or six. It is a light cloth hat, weighing only 1 oz.; fits any head, the inside rim having a rubber cord in it. The outside rim is held out in place by a spring wire.

We make veils of four different qualities.

No. 1 is our best veil, made of grenadine and silk brussels net, or tulle face.

No. 2 is the same without the tulle face, being all of grenadine.

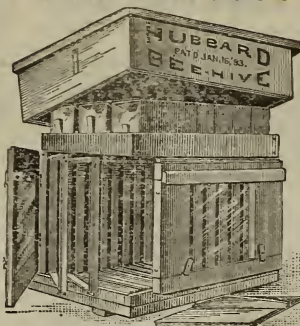
No. 3 is made of mosquito bar, with tulle face.

No. 4 is made of mosquito bar, without the tulle face.

Price—	each.	10.	100.
No. 1, Best veil.....	\$ 75	\$6 00	\$55 00
No. 2, Grenadine veil	60	4 75	45 00
No. 3, Tulle-face bar.	40	3 20	30 00
No. 4, Mosquito bar.....	25	2 00	18 00
Bee-hat.....	20	1 60	15 00

Sent postpaid, or with other goods, on receipt of price. Our veils are larger and more roomy than those of other makes that we have seen. They have a rubber cord in the top, to draw them tight around the hat, as shown in cut. The lower edge is bound with a blue ribbon, and is drawn under the suspenders, as shown. The grenadine veils will wear much longer than mosquito-bar.

A. I. ROOT, Medina, Ohio.

FORT WAYNE, IND.

CIRCULARS FREE.
ASK FOR SAMPLE ONE-PIECE SECTION IF YOU WANT IT.

G. K. HUBBARD,
277 S. HARRISON ST.,
FT. WAYNE, IND.

If you are ever annoyed by the scraping and breaking of combs; killing bees when setting a frame to one side, or hanging it in the hive; sagging at the bottom and getting waxed fast; shaking about when moving a hive; in short, if you dislike to pry and wrench your frames, break combs, and kill bees while handling them, you will be pleased with this hive.

VERY CONVENIENT. ACENTS WANTED.
10 For "1st Principles in Bee Culture." It tells how to Divide, Transfer, Introduce Queens, Feed, Unite, Stop Robbing, &c. Money returned upon return of book, if you are not satisfied. Mention GLEANINGS. 7-13db

BEE-HIVES, SECTIONS, ETC.

WE make the best bee-hives, shipping-crates, sections, etc., in the world, and sell them cheapest. We are offering our choicest white one-piece 4x4 sections, in lots of 500, at \$3.50 per 1000.

Parties wanting more, write for special prices. No. 2 sections, \$2.00 per 1000. Catalogues free, but sent only when ordered. 1tfdb

G. B. LEWIS & CO., Watertown, Wis.

In responding to this advertisement mention GLEANINGS.

DADANT'S FOUNDATION

Is kept for sale by Messrs. T. G. Newman & Son, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; F. L. Dougherty, Indianapolis, Ind.; B. J. Miller & Co., Nappanee, Ind.; E. S. Armstrong, Jerseyville, Ill.; E. Kretschmer, Coburg, Iowa; P. L. Viallon, Bayou Goula, La. M. J. Dickason, Hiawatha, Kansas; J. W. Porter, Charlottesville, Albemarle Co., Va.; E. R. Newcomb, Pleasant Valley, Dutchess Co., N. Y.; D. A. Fuller, Cherry Valley, Ill.; J. B. Mason & Sons, Mechanic Falls, Maine; G. L. Tinker, New Philadelphia, O.; Jos. Nysewander, Des Moines, Ia.; C. H. Green, Waukesha, Wis.; G. B. Lewis & Co., Watertown, Wisconsin; J. Mattoon, Atwater, Ohio, Oliver Foster, Mt. Vernon, Iowa; C. Hertel, Freeburg, Illinois; Geo. E. Hilton, Fremont, Mich.; J. M. Clark & Co., 1409 15th St., Denver, Colo.; Goodell & Woodworth Mfg. Co., Rock Falls, Ill.; J. A. Roberts, Edgar, Neb.; E. L. Gould & Co., Brantford, Ontario, Canada; J. N. Heater, Columbus, Neb.; O. G. Collier, Fairbury, Neb.; C. D. Batter, Peterboro, Madison Co., N. Y.; G. K. Hubbard, Fort Wayne, Ind., and numerous other dealers.

We guarantee every inch of our foundation equal to sample in every respect. Every one who buys it is pleased with it.

Write for free samples, and price list of bee-supplies and specimen pages of the new

REVISED LANGSTROTH BOOK,

Edition of 1889.

3tfdb

CHAS. DADANT & SON,
Hamilton, Hancock Co., Illinois.

In responding to this advertisement mention GLEANINGS.

For Sale. Barnes foot-power circular saw; price, delivered to cars, \$27.00; with scroll-saw, \$32.00. It is all in perfect order, as good as new.

D. S. BASSETT,
7-8d Farnumsville, Worcester Co., Mass.
In responding to this advertisement mention GLEANINGS.

Wants or Exchange Department.

Notices will be inserted under this head at one-half our usual rates. All ads intended for this department must not exceed 5 lines, and you must say you want your ad in this department, or we will not be responsible for any error. You can have the notice as many lines as you please; but all over five lines will cost you according to our regular rates. This department is intended only for bona-fide exchanges. Exchanges for cash or for price lists, or notices offering articles for sale can not be inserted under this head. For such our regular rates of 20 cts. a line will be charged, and they will be put with the regular advertisements.

WANTED.—To exchange 250 colonies of bees, for horses, mules, wagons, buggies, and 4 h. p. engine, or any thing useful on a plantation. 21tfdb ANTHONY OPP, Helena, Phillips Co., Ark.

WANTED.—To exchange pure Brown Leghorn eggs and cockerels (Todd strain) for any thing useful. Write first. A. F. BRIGHT, 31tfdb Mazeppa, Wabasha Co., Minn.

WANTED.—You to send for my new price list of Imported and American Italian queens. Can ship as early as the earliest. R. H. CAMPBELL, 31tfdb Madison, Morgan Co., Ga.

WANTED.—To exchange, a first-class violin, cheap at \$50.00, for a foot-power lathe. It must be iron, and in good order. D. S. BASSETT, 71tfdb Farnumville, Worcester Co., Mass.

WANTED.—To sell or exchange, Italian bees and queens, and supplies. Address OTTO KLEINOW, 41tfdb No. 150 Military Ave., Detroit, Mich.

WANTED.—To exchange my new price list of pure Italian bees and Poland-China swine for your name and address written plainly on a postal card. N. A. KNAPP, Rochester, Lorain Co., O. 5678d

WANTED.—To exchange Plym. Rock cockerels from Sugar Grove thoroughbred-poultry farm, Pitkin & Kilpatrick strain, at \$1.50 each, for bees by the pound. Correspondence solicited. 7-8d W. H. SWIGART, Dixon, Ill.

WANTED.—To exchange Vanderwort foundation for any quantity of nice yellow beeswax. 7-8d B. CHASE, Earlville, Madison Co., N. Y.

WANTED.—To exchange new 4 H. P. horizontal engine for bees. Give me a call it must go. 7-8d J. B. OVEROCKER, Box 47, Melrose, Rens' Co., N. Y.

WANTED.—To exchange for books, wax, extracted honey, or offers, new improved winter bee-hives, or will sell at half cost. C. H. FRASURE, Sherburne, N. Y.

WANTED.—To exchange all kinds of bee-keepers' supplies and Cuthbert raspberry-plants for bees. C. W. COSTELLOW, 81tfdb Waterboro, York Co., Me.

WANTED.—To exchange, barrel steamer for cooking feed, T pipe complete, and Wilson hand bone-mill, new, for extracted honey or any thing of standard market value. 8-9d H. L. GRAHAM, Letts, Iowa.

WANTED.—A good workhand by the year, who knows something about bees, competent to manage a large farm and stock. G. J. GRAY, 8-9d Dell, Malheur Co., Ore.

WANTED.—To exchange complete stencil outfit, consisting of 3 sets of dies, 6 lbs. brass; 700 plates, hammer and block, etc., ready for work; worth \$23, for stem-winding watch or best offer over \$7.00. Have quit business. J. F. KALE, Newton Falls, O.

WANTED.—To exchange P. Rock eggs, fine, for Italian queens; Appleton's Cyclopaedia for honey; and a price list for your name. St. Joseph Apiary, St. Joe, Mo.

WANTED.—To exchange Japanese buckwheat and P. Rock eggs and Barnes improved circular saw, for bees by the pound, or young queens. 8d H. O. McELHANY, Cedar Rapids, Iowa.

WANTED.—Untested Italian queens, for which I wish to exchange eggs from choice pure-bred P. Rocks, at the rate of nine eggs per queen. 7-8d A. F. LOOMIS, Hartwellville, Mich.

WANTED.—To exchange one ten-inch Root fdn. mill; has been used but one year, also 30 feet of 6-inch rubber belt, for bees or bee-papers' supplies. 71tfdb THOMAS GEDYE, Kangley, LaSalle Co., Ill.

WANTED.—To exchange 400 brood-combs in L. frames, and 300 combs in half L. frames (half depth), valued at 10 cts. each. 7-8d MISS DELLY REYNOLDS, Sonora, Ky.

S. C. B. Leghorns, S. L. Wyandotte, and P. duck, 15 eggs, \$1.00, in exchange for bee-supplies, raspberry and strawberry plants, or beeswax. 7-8d GEO. A. WRIGHT, Glenwood, Pa.

WANTED.—To exchange Japanese buckwheat for Pekin ducks, or eggs, Wyandotte eggs, bee-supers for L. hive, and Italian queens. Address 7-8d A. J. SHEPARD, Walker, Linn Co., Iowa.

WANTED.—To exchange greenhouse and bedding plants, or seeds, for a few colonies of Italian bees. Send for large illustrated catalogue to select from. L. TEMPLIN & SONS, 3d Florists and Seedsmen, Calla, O.

WANTED.—To exchange a "Little Daisy" garden drill and cultivator combined, just new, for a good honey-extractor to take the L. frame. A. F. MCADAMS, 8d Columbus Grove, Putnam Co., O.

WANTED.—To exchange three-frame nuclei, at \$3.00 each. Tested queens, \$1.25 each; untested, 75 cts. each; Italian albino, for Shropshire or Hampshire sheep. I. R. GOOD, 81tfdb Nappanee, Ind.

Black and Hybrid Queens For Sale.

For the benefit of friends who have black or hybrid queens which they want to dispose of, we will insert notices free of charge, as below. We do this because there is hardly value enough to these queens to pay for buying them up and keeping them in stock; and yet it is oftentimes quite an accommodation to those who can not afford higher-priced ones.

FOR SALE.—A few black and hybrid queens, 35 and 50c. YOUNG G. LEE, Charlotte Harbor, Fla. 8910

I have about ten black queens which I will sell at 35 cts. each. A. J. HIGGINS, Washington Mills, Dub. Co., Iowa.

I have four Italian queens, with a dash of Cyprian blood in them, that I will send by return mail for 50 cts. each; were reared last year, and are good layers. L. B. SMITH, Cross Timbers, Johnson Co., Tex.

I have 25 hybrid queens which I will sell for 25 cts. each. Stamps taken. H. H. T. KOHLENBERG, New Braunfels, Comal Co., Tex.

I have a few hybrid queens to spare. Apply before May 1st. J. T. WILSON, Little Hickman, Jessamine Co., Ky.

Four good hybrid queens for sale. They are one year old, and I warrant safe arrival. One queen, 50 cts. or 4 for \$1.75. D. D. HAMMOND, Malone, Clinton Co., Ia.

CHEAP! To reduce my stock I will sell a few full stocks of pure Italians, in new L. portico hives, on six frames, for \$5.00. C. G. FENN, 8d Washington, Litchfield Co., Conn.

Rearing Queens in Colonies

having laying queens. Send your address on a postal card. Circular free. 8-10d H. ALLEY, Wenham, Mass.

In responding to this advertisement mention GLEANINGS,

200 COLONIES BEES FOR SALE, IN ANY SHAPE TO SUIT PURCHASERS.

By the hive, by the pound, 2, 3, or more frames of brood, with or without queens. Black, hybrid, dollar, or pure Italians. Write for prices, stating what you want. I must sell, so they will be cheaper than the cheapest.
8-9d

G. W. GATES,
Bartlett, Tenn.

EARLY + QUEENS

S. NOSTITTE

	Apr.	May.
1 untested queen	\$1.00	\$1.00
3 " "	3.00	2.50
1 virgin " "	\$6 per doz	60
1 tested " "	3.00	2.50
3 " "	7.50	6.00

2 and 3 fr. nuclei; special rates to dealers.
South Carolina is the best State in the South for early queens. The climate is well adapted to queen-rearing, and it takes but 4 or 5 days to send them through the mails to any part of the Northern States or Canada. Prompt shipment and safe arrival guaranteed.
W. J. ELLISON,
6-3-9-10d Stateburg, Sumter Co., S. C.

In responding to this advertisement mention GLEANINGS.

1000 Lbs. Bees with Queens and Brood.

Bee Supplies, Honey, &c. Price List Free.
Oliver Foster, Mt. Vernon, Linn Co., Iowa.
Mention Gleanings. 7-10db

CARNIOLAN QUEENS

From imported mothers. Untested queens, \$1.00; tested queens, \$2.00.
J. B. KLINE'S APIARY,
Topeka, Kansas. 7-10db

HALF-PRICE!

SOMETHING FOR THE GOOD WIFE.

Any one sending us \$3.50 for 1000 FIRST-CLASS SECTIONS or \$4.00 worth of other supplies may have one of our SELF-HEATING CHARCOAL SMOOTHING-IRONS for \$1.50, which is half-price. For description, send for circular, or see adv't in GLEANINGS for Oct. 15, 1888.

SMITH & SMITH,
Kenton, Hardin Co., Ohio.
7-10db

In responding to this advertisement mention GLEANINGS.

Pure Italian Bees For Sale

Two-frame nuclei, \$3.50; 3-frame, \$4.00. Full colony in A. I. Root's Simplicity hive, \$7.00. Each nucleus and full colony to contain a fine tested queen, and plenty of bees and brood, all on wired L. frames, combs drawn from foundation. To be shipped in May. Safe arrival guaranteed. Hives new, and every thing first-class. I shall do by all as I would be done by.
N. A. KNAPP,
7-10db ROCHESTER, LORAIN CO., OHIO.

In responding to this advertisement mention GLEANINGS.

Minorcan Queens.

Very prolific, and tolerably docile. No foul brood known. Will be sent from April to October, by mail, on receipt of \$2 greenback in certified letter.

F. C. ANDREU.
7-8-9d Port Mahone, Minorca, Spain.

Italian Bees and Queens.

Tested queen, \$1.50; untested, \$1.25. Bees, per lb., \$1.00. Frame of brood, 50 cts.: 3-frame nucleus, containing 2½ lbs. of bees, 2 L. frames of brood and tested queen, \$4.50. Queens reared from imported mother. Mismatched queens, 50 cts. each. Send card for price list.
MISS A. M. TAYLOR,
7-8d Box 77, Mulberry Grove, Bond Co., Ill.

In responding to this advertisement mention GLEANINGS.

Italian Bees and Queens for Sale

Wishing to reduce my stock of bees, I offer 50 colonies of fine Italian bees at the following extremely low rates: Full strong colonies on L. frames, put up in light shipping-boxes, f. o. b. at my station, \$5.00 per colony. Tested queens, \$1.25 each. Satisfaction guaranteed.

A. C. BRUSH,
8-11db Susquehanna, Sus. Co., Pa.
In responding to this advertisement mention GLEANINGS.

Attention, Poultrymen!

Black Minorca, Langshan, R. C. B. Leghorn, Silver-spangled Hamburg, and Wyandotte eggs, \$1.00 per 13. Minorca fowls, \$3.00 per pair.

E. P. ALDRIDGE,
8-11db Franklin Square, Col. Co., O.
In responding to this advertisement mention GLEANINGS.

COMB FOUNDATION.

Brood, 32c; thin, 42c; 20 lbs. or more, 30 and 40c.
8-9d H. L. GRAHAM, Letts, Iowa.

LACED and WHITE WYANDOTTES and PEKIN DUCK EGGS: 13 for \$1.50; 25, \$2.50. J. H. WARR, Richards, O.

IF like begets like, then I know you will like my well-liked Brown Leghorns. Eggs, \$1.00 per 13; \$1.50 per 26. Price list free.
7-10db A. F. BRIGHT, Mazeppa, Minn.

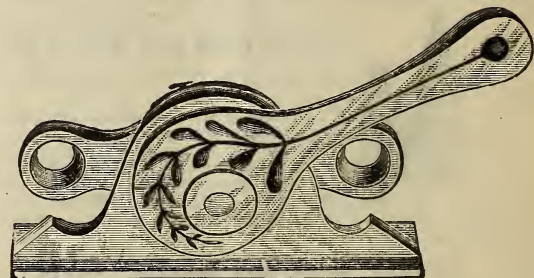
AN OLD BEE-BOOK REVISED, and DADANT'S FOUNDATION. See advertisement in another column.

PURE ITALIAN BEES & QUEENS.

Full colonies and nuclei, per frame, 60c. Tested queens, \$2.00; after June 1, \$1.50. Untested queens, \$1.00; after June 1, 75c. Remit by postoffice money order, registered letter, or draft on New York. For any other information, address

C. W. JONES & CO.,
4-9db Bryant Station, Maury Co., Tenn.

BUCKEYE SASH-LOCK IMPROVED.



Since we first got hold of this most excellent fastener we have sold over 60 gross of them. This large sale shows how well they are liked. The last lot we received from the manufacturer are somewhat improved. By comparing the above cut with the one in our advertisement on the first inside cover page of this number, you will see that the change is in the lever. The old pattern has a knob, while the new has not. In most windows, as now made, there is a strip on each side, between the upper and lower sash, separating the grooves in which each sash is worked up and down. The improved lock can be fastened to the upper sash to press against this strip, and allow the lower sash, when raised, to pass it; while with the old pattern the lower sash would strike the knob on the lever. The lock as improved is absolutely perfect for either upper or lower sash. Price of the japanned, same as in the adv't, 5c each; by mail, 8c; 50c per doz.; by mail, 75c; \$4.00 per 100. We have them also made of solid brass at 10c each; \$1.10 per doz.; \$9.00 per 100.

A. I. ROOT, Medina, Ohio.



Vol. XVII.

APRIL 15, 1889.

No. 8.

TERMS: \$1.00 PER ANNUM, IN ADVANCE; 2 Copies for \$1.50; 3 for \$2.75; 5 for \$4.00; 10 or more, 75 cts. each. Single number, 5 cts. Additions to clubs may be made at club rates. Above are all to be sent to ONE POSTOFFICE.

Established in 1873.

PUBLISHED SEMI-MONTHLY BY

A. I. ROOT, MEDINA, OHIO.

Clubs to different postoffices, NOT LESS than 90 cts. each. Sent postpaid, in the U. S. and Canadas. To all other countries of the Universal Postal Union, 18 cts. per year extra. To all countries not of the U. P. U., 42 cts. per year extra.

OUT-APIARIES—NO. V.

RENTING.

AFTER settling upon a location for an out-apiary, make sure to have a distinct understanding as to the rent you are to pay. If the landlord says, "Oh! never mind, we'll not quarrel about that," leaving the matter to be settled some time in the future, don't leave it at that. There is a chance for a very wide difference of opinion as to what is right, and that difference will probably never be any less than when you start. Indeed, unless you know your man well it may be well to have every thing in writing. Perhaps I ought to add, also, that your man should know *you* well; and if you haven't already established a reputation for being a thoroughly upright man, I advise you to commence putting in 24 hours of every day, seven days in the week, working at it. It is difficult to give any advice about what rent should be paid, as so much depends on circumstances. If land is worth \$4.00 per acre, annual rent, and the presence of the bees makes no trouble whatever, I see no reason why the bee-keeper should pay more than \$4.00 per acre for the land he holds from cultivation. A tenth of an acre is sufficient ground on which to place 100 colonies, so that, in the case supposed, 40 cents would be a fair annual rent. But the flying bees may prevent horses from working anywhere near the hives, and thus, practically, the bees may occupy an acre or more of ground. Besides, the farmer may dislike to have the bees around, and \$40 added to the 40 cents would not reconcile him to their presence. Reference to page 946, GLEANINGS for Dec. 15th, 1887, will show what a diversity there is in the views and practices of some of our leading bee-keepers. Some

say the same price as the land could be rented for, for other purposes. Some say it depends on circumstances, and wisely decline to set any figure. Prof. Cook thinks the rent should be only nominal, as the bees are a benefit to the farmer. Dr. Mason says he can get plenty of places at \$5.00; \$8.00, \$10.00, \$15.00 to \$25.00, are mentioned by others, while Mr. Wilkin, in California, thinks \$100 is a moderate rent for a good location where 300 or 400 colonies can be kept with exclusive control of the bee-pasturage within a radius of three miles. Mr. France pays 25 cents for each colony, spring count. Dadant & Son pay one-fifth of the honey crop. This, however, includes not only rent, but house-room for extracting, for spare supers, boxes, crates, etc., and the board of men and team while at work. Capt. Hetherington, who is probably the largest out-apiarist in the world, pays uniformly \$15 for each apiary, and P. H. Elwood does the same.

From all this we learn that "circumstances alter cases," and also that in actual practice bee-keepers are very liberal in the rent they actually pay. I think this is decidedly advisable. The matter of rent forms a comparatively small part of the expense at any rate; and the good will of the family where the bees are kept has a cash value of considerable amount. I think I should always want to pay a *little more* than the farmer thought actually right. Be careful to manage so there shall be no annoyance from the bees on account of carelessness on your part. In my own practice I have never been able to have my landlords agree to take any regular pay. In two places I have relatives, so that in one case only was there a cold-blooded business transaction, and in that case it was hardly so after the first year, for Mrs. Belden insisted it was a pleasure to see us come; and here I may as well

own, that taking the women-folks along may make some difference in my case, for they always insist on having every thing picked up and in good shape about the apiary, and I'm afraid I shouldn't always be so neat.

In many little ways it is in your power to do things that will be pleasant, and will be a pleasure for you to do. If you've been reading a daily paper as you drove to Mr. Jones's, leave it at the house, and say you've read it and don't care for it. Mrs. Jones is pretty sure to like flowers. Take her some seeds or some slips. Unless you're a better bee-keeper than I am, you will occasionally have some of what I call "crooked honey," which the bees have built where you didn't want it, or in shape that you don't want, and you may as well leave it with Mrs. Jones. Don't take it to her and say, "I always like to be independent, and pay my way, so I brought you some nice honey," but go and ask her if she will lend you a plate or a milk-pan; then take her the honey and say, "Here's some honey that was in such shape I didn't want to leave it in the hive, and I'll be obliged to you if you'll use it for me. It will be a dauby sticky mess before I get it home, and I'd like to get rid of it." I've said that more than once, and told the truth too, and I'm pretty sure the crooked honey was appreciated. It would be a mutual pleasure, too, for you to go to the house early in the harvest and say, "Mrs. Jones, here's the first section of honey ever finished by the bees on your place, and I want you to see what nice work they make. Try it, and see if it won't be a good medicine for Mr. Jones." I might add that, although I pay no rent, I always make a point at each apiary of leaving all the honey I think the family need for a year.

C. C. MILLER.

Marengo, Ill.

Friend M., your concluding paragraph sounds so exactly like you that it seems to me I hear the tones of your voice, and catch the kindly look from your face as I read it. You are surely right; and the plan you give will not only enable one to get along nicely in establishing out-apiaries, but it will help us in every kind of business in the world. Nay, further: When the world's business and the world's busy cares are done, it will help you to lie down in peace, and be ready for the "Well done, thou good and faithful servant," as he is ushered into that better land.

WORKING FOR EXTRACTED HONEY.

FRIEND DOOLITTLE GIVES US SOME WISE HINTS IN REGARD TO THE MATTER.

BEFORE me lies a letter requesting that I give in GLEANINGS an article on "how to manage for extracted honey," saying, "Such a letter would be of great benefit to all novices." Of course, I desire to oblige and be a "benefit to all novices," but I can hardly see how the writer of this request knows that such an article would be a benefit to "all novices," for it is my opinion that the majority of them would not care a cent for it. However, as the time is at hand to begin to prepare for our season's work, it might be well to see what should be done if we are to work for extracted honey the coming summer. Just at the present time there seems to be a "craze" among bee-keepers on the subject of comb-honey

production, some of our bee-papers going so far as to inquire seriously if the "extractor ought not to go," claiming that it has been a damage to us as apiarists. I fear this is not a wise policy, for it can only result in soon lowering the price of comb honey and advancing the price of extracted, thus causing an expensive changing of fixtures a second time. It seems to me that the well-balanced apiarist should produce both comb and extracted honey; and as he sees the tide swaying toward the side of the one, he should go a little heavier in the opposite direction, but not enough so as to throw aside all his fixtures along the line the tide is moving. As I have worked for years for both comb and extracted honey, and believing that the present time is favorable to the production of more extracted honey and less comb, I will, in brief, tell the readers of GLEANINGS how I proceed to arrive at what seems to me the best results.

The first thing necessary in the production of extracted honey is a good queen to produce hosts of workers in time for the harvest. But good queens are of value only when we surround them with favorable circumstances, thus getting large numbers of eggs laid at the right time, and causing each egg to be nourished to a perfect bee, so that we can have the bees in our colonies by the tens of thousands at the right time. Failing to do this, the flowers will bloom in vain as far as filling our surplus combs with honey ready for the extractor is concerned. But, what are favorable circumstances? is asked, to which I reply, an abundance of food and warmth. The abundance of food is quite easily secured in this day of bee-feeders, and especially so if the apiarist has set aside, the previous season, as he should, combs solid with honey, which are ready to be set in the hive at any time. To secure the requisite warmth in early spring, I know of nothing better than chaff hives, such as I spoke of a month ago, which, together with chaff dummies for the weaker colonies, will give us the best thing possible along this line. If we do not have the chaff hives, dry-goods boxes or anything made of rough boards to set the single-walled hives in and hold the chaff is better than no protection at all. Fixed in this way, colonies will go right on breeding during cold days and frosty nights where they would not think of doing so were no such protection used. The weaker colonies are to be confined to the combs they can occupy till they are filled with brood, when a frame of hatching brood is to be inserted in such a colony, taken from one of the strongest. Don't do this till they have the combs well filled with brood, for I find that a weak colony can be brought up to a condition ready to gather honey, much sooner by leaving it till in the condition as above, than it can by continual fussing with it in early spring. In this way, now work till all hives are filled with brood, which will be, if you have succeeded as you should, a little in advance of the honey harvest, or at about the time the main honey harvest is commencing.

If we wish no increase from our bees, no time is now to be lost in putting on the surplus arrangement, otherwise the bees become crowded and may get the swarming fever. For the extracting super I prefer another hive of the size of the first, but some prefer one of only one-half the depth. As to results, there is probably no great difference, but I consider it quite an object to have all hives and frames alike in the apiary. In putting on this sur-

plus arrangement I prefer to use empty combs, if possible, instead of comb-foundation. I also prefer to use two large or wide dummies, one at each side, for a few days, so that half of the room is taken up, which leads the bees along gradually instead of thrusting a large amount of surplus room upon them at once. As soon as the half of the hive given them is partly filled with honey, the dummies are taken out, the combs spread apart, and frames filled with foundation put between them. At this stage I would just as soon have foundation as empty comb, for the bees are now ready to work upon it, while before they were not. The time for taking out the dummies is when you see the cells being lengthened out with new comb built along the top-bars of the frames. How you will proceed in the future, depends upon whether you wish your honey ripened in the hive till the harvest is over, or ripened in a warm room by evaporation. Sometimes I think that honey left on the hive through the season is of better quality than that extracted every week or so; then, again, I am not so sure about it. Of one thing I am certain: More honey can be secured with less hives and fixtures where it is extracted when the bees first begin to seal it, than can be gotten by the other method. As to labor there is little difference, except that, when we extract often, the labor comes at a time of year when we are most crowded. To be sure, the operation is gone through with oftener; but to offset this there is little or no uncapping to be done, while the honey leaves the combs more clean with less than one-half the labor in turning the extractor. In my opinion the season has more to do with the quality of the honey than the process of ripening. If the season is hot and dry I would just as soon have honey extracted as above, as that left on the hive the season through. If damp and cool, I prefer it ripened by the bees, and even then it is not nearly as good as that gathered in a hot dry season. If you decide to leave all on to the end of the harvest, another story should be added just before the first is filled; but if not, the one extra story will probably be all you need.

In conclusion, I will say that the getting of multitudes of bees, just at the right time, has more to do with the successful working for honey than any thing else; and when all realize this, and work for the same to the fullest extent, one-half of the colonies now employed will gather as much surplus as the whole do under our present management.

Borodino, N. Y., Apr. 1, 1889. G. M. DOOLITTLE.

I believe I have nothing to add, friend D., except that I heartily concur in almost every point you make, and especially your concluding sentence.

RAMBLE NO. 14.

ON A (READING) SPREE. THE RAMBLER DISCOURSES ON THE EVILS OF INTEMPERANCE.

I HAVE had bee-keepers come into my apiary who were evidently on a spree from strong drinks; and it is a deplorable thing to see a man of intelligence and reason submit himself to this demon. But intoxicating liquors do not bring all the misery, and there are other sprees that seem to be nearly as bad. And, not to judge others harshly, the Rambler would commence with himself, and say that he is many times subject to sprees. Let him get hold of a good story, and day

and night it is pored over until finished; and what is that but a reading-spree? The Rambler has no doubt that others who read this will acknowledge the same failing; and having in my rambles found an extreme case of this sort of spree, I wish to hold it up as a warning to those who may unconsciously cultivate the habit, to their detriment, instead of edification, and also to show that a reading-spree will bring on nearly as bad results as the slavish use of the intoxicating cup.



A MAN WHO NEGLECTS HIS FAMILY.

The man whom the Rambler found, not only desired to read a book, but also to own it, so in the course of a few years his hard earnings went into a fine library of over 400 volumes, embracing works of fiction, history, science, and medicine. On any department of history he wished to post up; the most expensive books were purchased; he essayed to be a bee-keeper, purchased books and periodicals, and a general study of the business was entered into. The theory of bee-keeping was at his fingers' ends; but putting his knowledge into practice, a failure was the result. Division and re-division was made for rapid increase, with the usual result—ruination to the swarms. And another trial led to a failure in some other point.

The poultry business was taken up in the same way, with the same results. Meanwhile he took to himself a wife, and five children were born to them. These children are as bright and active as children will average, and, though living within five rods of the district school, the oldest have never been to school. Their education is neglected, to the carrying-out of some fine-spun theory about education. This man occupies a farm of 60 acres of good land which has been left by will to his children; he can not spend it, but can work it and support his family. Instead of working it, it has been much injured by successive renting; and at the present writing the wife is sick and is not expected to live. The children are in rags, except when clothed by kind neighbors, and all are thrown on the town for support. The father is strong and hearty—aged about 35, in the vigor of manhood. Is it any wonder that he is threatened by White Caps? While passing the house the Rambler and his traveling companion remarked that there was a house that looked as though an inebriate lived within—general dilapidation all around. The Rambler has found that, to be thrifty, a man must not be a slave to whisky or even to books. A book carefully and slowly read, and, better, re-read and marked, will give much

lasting benefit. There is a great amount of time thrown away upon even our daily and weekly papers. The Rambler reads many a paragraph before dinner that he can not remember after dinner, and he does not eat very hearty either. That we may all be free from frequent reading-sprees is the desire of the

RAMBLER.

Friend R., I have just been meditating on the very point you make, and I am really afraid that a good many of our young people are reading too much and practicing too little. The result of this kind of intemperance—for intemperance it surely is—is an ability to talk well on these subjects, and oftentimes to write very fair essays for the agricultural papers; but when somebody happens to pay a visit to the writer of these articles, and finds that his home does not correspond a bit with his preaching, it tends to demoralize and disgust the whole fabric of human society. Every one should read the books and papers, and know what is going on; but to continue to read and read, without actual practice, is just what you put it. In our own home we have a young lady who reads books until almost eleven o'clock at night, unless her parents interfere and make a fuss about it. As a result she is not ready for breakfast next morning. When I was her age I read pretty much every thing I could get hold of, but there was not enough to be had to give me a chance to be intemperate, as you put it. In this age of abundant periodicals, private and public libraries, etc., it does behoove us to look well to our children, and see that they do not acquire intemperate habits in the use of books.

CELLARS AND WINTERING.

PROF. COOK GIVES US A FAVORABLE REPORT OF HIS CELLAR DURING THE PAST WINTER.

MR. EDITOR:—Our old cellar was in sand, entirely below ground, and provided with good sub-earth ventilation. A good stream of water flowed into and out of that cellar constantly. I never knew the thermometer to go lower than 38° F., and I rarely knew it to go lower than 40. The bees wintered well. Our present cellar is in regular Medina clay, and this winter the thermometer has gone down to 35° F., repeatedly, and once down to 30° F., so that water froze in the cellar. I used an oil-stove repeatedly, and so kept the temperature for the most part up to about 40° F. My first point is, that a cellar in sand is better for bees than one in clay. I should think that the running water might have made the difference, except one very dry winter when the stream dried up. That winter was much colder than this winter has been, and yet 38° F. was the lowest in the old cellar. Again, the old cellar, or the house above it, was protected by a barn and evergreens. The present bee-house is on a bleak exposed hill. This situation may aid the clay. Were I to build a bee-house again, and could have my choice, I should select a sandy site. When the thermometer got down to 30° F., the bees were quite uneasy. I don't like such a low temperature in the cellar, so I was uneasy. Accordingly, last Tuesday, being a warm day, we concluded to give the bees a fly. We find them usually strong and in good condition. As in

the two past winters, the Heddon hive is far ahead. My assistant said every colony in the Heddon hives is as strong as they were in the fall. Most of the hives are covered only with a board, and have the entrances open. When set out, the covers were dripping with water. We fed most of them sugar syrup last autumn. I have never yet given just my opinion of the new Heddon hive since using it. I shall, with your kind permission, do it soon. It will not be all praise, but I am fully persuaded that the double brood-chamber, divided horizontally, is an advantage in cellar wintering.

I believe that Mr. Doolittle, if I remember correctly, found, a few winters ago, that the use of his oil-stove, to keep the cellar at the right temperature, was an expensive experiment. So I was somewhat nervous this winter. I am glad to report that our bees are bright, lively, with no smell of disease about their persons, and yet they were warmed by an oil-stove.

A. J. COOK.

Agricultural College, Mich., Apr. 1, 1889.

I have for some time been much of the opinion you express in the above, friend C., that a sandy soil is much better for a beecellar than cellars made in the damp cold clay. I should be glad to have a report from you, favoring a double-brood chamber divided horizontally. At this date, Apr. 11, Ernest has not yet taken his Heddon hive out of the cellar. He says he wants to wait until a week or two after just the right time, as Dr. Miller said at Columbus.

A QUESTION OF BREAD AND BUTTER.

SHALL WE COMBINE OTHER OCCUPATIONS WITH BEE-KEEPING, WHEN IT NECESSITATES A NEGLECT OF THE LATTER?

ABOUT a year ago there was some discussion as to whether it was better to market our eggs all in one basket, figuratively speaking. To give a little of my experience in the last year is the task I undertake.

My crop of 1887 was very small—the gross proceeds only a little over \$125, or about \$100 net. You see, without some other resource I should hardly have made a living that season. As it happened, I did not have to neglect my bees much during that year. But this last season, the case was different. My bees came out of winter well, but shorter of stores than ever before. The spring was so cold and cloudy that they hardly got three days' work on fruit-blossoms. I managed to bring them into summer in pretty good condition, however. Then day after day passed, first into weeks, then into months, as I looked anxiously. Was the failure an unmixed evil? I had other crops in, which I had employed a hand to cultivate. But he failed me early in the season. Then, owing to the scarcity of laborers, and ill health on my own part, those crops were all and more than I could attend to properly. The season was favorable to the growth of potatoes, corn, and—weds. If I could keep down the weeds I knew that corn and potatoes would yield me something, while the bees did not promise any thing, as it appeared that clover would not blossom at all. Should I peg away at a certainty, save my other crops, and let the doubtful bees go? I did that very thing, so far as I was able. I knew most of them would get along, although poorly. Some were in a starving

condition; all were listless and inactive. The busy roar of a honey season was never heard last summer. Twice I looked, to find a colony starving, and fed them up. Two weak ones died. I raised one batch of cells, but several queens never hatched.

But I will not detail all the losses from pure neglect. The middle of August found the prospect as bad as ever. About that time I undertook a job at which I knew I could make wages. It assumed larger proportions than I thought it would, and in the midst of it the biggest flow from heart's-ease I have ever known, with perhaps one exception, set in. I seldom get any surplus from fall flowers, when the hives are already nearly full. I have been so often disappointed that I had ceased to look for any thing from those sources. Now, when a boom had come, my bees were not in a condition to take advantage of it. Very few of them would go into surplus arrangements, and many were too weak to carry much into the hive at all. By dint of hard work I think I saved about all the bees could gather. I realized only about 400 lbs., comb and extracted. All the latter was taken from the brood-chamber; and when I came to prepare the bees for winter, quite a number of colonies were so weak that I had to unite them, and some others were weaker than I generally put into winter quarters. I have not half the extra combs in the honey-house that I shall need to feed them next spring, if the season is the most favorable. My stock has run down—in spite of a few swarms—lower than it has been for five years—nine colonies lower than a year ago.

Now, have I made or lost? Have I done right or wrong? Is it best to get my eggs in more than one basket, and thus have too many irons in the fire? I believe I have done the best thing under the circumstances. I have lost in bee-stock, and made a living. The loss will be felt in the future, that I may have my victuals and clothes in the present. If I could live without eating, and go barefoot, I should be that much better off. But bread and boots are necessities, and I must have them, even at the expense of capital for future use. For me, then, situated as I am, it is better to have more than the one resource (bees), even though that resource sometimes suffers by it. But if my situation were better—if I had a little surplus to help me live for a season, it would be better for me to stick to my bees through thick and thin. I should certainly be better satisfied, for I like bee-keeping better than any other occupation I have ever tried.

ARE QUEENS INJURED IN SHIPPING? A TESTIMONY. On page 22 Mr. Swinson revives that subject. When I read Mr. Doolittle's article, page 749, 1888, I thought, "That accounts for it." I bought an imported queen of A. I. Root, in the summer of 1886. She was still living and laying this fall; but never, since I have had her, has she approached the average as a layer. In that respect she has been a perpetual disappointment to me. I knew not what to make of it until I read the article referred to.

GEO. F. ROBBINS.

Mechanicsburg, Ill., Jan. 10, 1889.

Friend R., I do not believe that you would be any happier than you are now, if you could live without eating, and go barefoot, as you express it. I think it is well to have more than one resource for a livelihood; but at the same time it behooves us to watch keenly, so as to be sure to make the best of both or all of our resources.—I

do not quite like your reasoning in regard to that imported queen. You have good proof, it is true, that imported queens are, some of them, poor layers, like all other queens; but certainly the single instance you mention does not go very far toward proving that *all* queens that have crossed the ocean are necessarily less prolific than others. I believe that reports have been given on these very pages, of queens that crossed the ocean, and afterward took long trips by mail, and yet furnished quantities of brood that would compare with any home-reared queen. Nearly half of the colonies in our apiary are provided with imported mothers; and, as a rule, we have been in the habit of expecting a little *more* of them in the way of egg-laying, rather than less. Their journey across the ocean certainly does not permanently cripple them.

SPECIAL DEPARTMENT FOR A. I. ROOT, AND HIS FRIENDS WHO LOVE TO RAISE CROPS.

SOMETHING IN REGARD TO BUSH LIMA BEANS IN GENERAL, FROM PETER HENDERSON.

MR. ROOT:—I notice your continued efforts to get at the facts about the new Bush lima, that have been questioned by two or three of our disappointed contemporaries who feel annoyed about not being fortunate enough to get hold of such a good thing. That is human nature, and I must admit that I would have felt any thing but pleasant had we been left behind in such an important race, particularly if we had had the thing first in hand and failed to see its merits, as one of your correspondents admitted to me he had. Still, had such been our misfortune I hardly think we should have been weak enough to show our chagrin by decrying it when it was being sent out by a rival firm.

I notice what you say about having our Bush lima cooked and tasted by your family, and that you thought it had not got the lima flavor as much as the pole limas. I am afraid you are in error about that. We made a complete and exhaustive test of it the other day. We had them mashed up so that the size of the beans could not be seen, so as to influence judgment. We numbered the samples, sent half a dozen of our clerks as tasters, and the universal judgment was that there was no perceptible difference, because dried limas of *any* kind give but little of the rich *lima* flavor.

Now, I will give some of our contemporaries, who are claiming to have the large lima in bush form, a chance. I will pay one thousand dollars for a single bushel, or seven cents each for 15,000 beans, on proof that the seed will produce the *large* lima in *bush* form, as is done by *our* new bush lima. That it will yet be done is probable, for there is no reason that the large lima should not "sport" to the bush form as the small lima has done.

One of our near neighbors, William Elliott, one of New York's well-known seedsmen, was sent about a bushel and a half of large limas last fall, with a dried specimen of the plant, which certainly showed it in that condition to be a bush lima. I offered him nearly \$1000 for his bargain (?), but he laughed me to scorn, for he thought there were many thousands in it. But, alas! "the best-laid schemes of mice and men gae aft a-gae." Mr. Elliott's "dwarf"

beans, all of them on trial, got to the top of the highest poles. Somebody had "pinched back" the pole lima to throw it into bush form, and sold, or tried to sell, Mr. Elliott the product, because I believe he was sharp enough not to pay for the seed until it had been tested.

PETER HENDERSON.

New York, April, 1889.

Many thanks, friend Henderson, for kindly posting us in regard to this matter. I am very glad indeed to see your offer for a Bush lima that will furnish beans as large as our pole lima beans. It seems to me that this whole matter begins to look as if it might usher in a new era. What I mean is this: We have for years been breeding cattle, horses, poultry, etc., to supply the demands of the market; and almost as soon as it begins to be evident that there is a demand for a different animal from what we have already on hand, straightway somebody brings it out.

Now, friend Henderson has, in the above, told us just what he wants in the way of a lima bean, and I am exceedingly glad to hear him say he is ready to pay one thousand dollars for it. I am much better pleased to have such an offer as this than I should be if somebody would offer a thousand dollars for the best newspaper story, because I think there is much greater need of having boys and girls out in the open air, developing nature's treasures—yes, raising beans if you choose—than there is to have them crowd our newspapers and periodicals with rejected manuscript. The concluding sentence from Peter Henderson reminds us that swindlers are already in the business, and that we should look out before we pay out our money. And this brings us to a consideration of the Kumerle lima bean, offered by Thorburn. I do not believe that this is a humbug, because Thorburn's name itself is a sufficient guarantee, only I wish he would tell us more about it. Has Thorburn himself ever grown the bean itself, or seen it growing?

Here is something in regard to Kumerle's Dwarf lima bean, from another seedsman:

Mr. Root:—I am acquainted, in a business way, with the originator of Kumerle's Dwarf lima bean, who supplied Thorburn & Co. He says, "It is a sport from Dreer's improved lima bean, possessing all the fine qualities of the parent; grows two feet high, branches out in all directions, and should be planted in good soil, in rows three feet apart. It does not require any poles. It has been grown for three years, and has shown no tendency to run." He sold it this season only in packets containing 13 beans, at 25 cents. I have one packet. I have written him, and asked him to set a price on 100, 500, or 1000 beans; and if they can be got I will get his permission to send you some for trial.

ISAAC F. TILLINGHAST.

La Plume, Pa., April 4, 1889.

As we go to press we have nothing more from friend Tillinghast, but hope to have something favorable soon.

Here is a report from the Henderson Bush lima, right near where it originated:

HENDERSON'S BUSH LIMA BEAN.

For two seasons past I have cultivated the Bush lima bean. Having a wet season last year we found

it necessary to place brush close to the plants on each side of the rows, to keep the pods from touching the wet earth, which speedily rotted them. The beans are as large as the old Carolina or Sewee lima. I obtained them of a party in Prince Edward Co., Va., where it seems they have been known for several years. During the last six years I have grown an onion that corresponds exactly to the description given in the catalogue, of the so-called New Egyptian. To my certain knowledge it has been raised in Virginia for the last 20 years. A. S. MARTIN.
Roanoke, Va., March 13, 1889.

Thank you, friend M. We should be exceedingly obliged for any facts you can give on the subject of the new lima beans. It is quite likely that the onion you mention is the New Egyptian. I have heard of it from several localities, although it seems that Gregory was the first to catalogue it and bring it generally before the public.

THE CATALPA; IS IT A DESIRABLE TREE FOR ORNAMENTAL PURPOSES?

Some nurserymen are advertising the *catalpa* as a very hardy and desirable tree for ornamental planting. They state that plants the size of straws, planted late in May, grow to be seven feet high, and four or five inches in circumference, at the base. Please tell us if it is grown in your locality; and if so, with what success. ROBT. H. SHIPMAN.

Cannington, Ont., Can., Feb. 18, 1889.

Friend S., in California the *catalpa* does all you mention; and I am inclined to think that it does even more; and, best of all, when it is once started it will live right through the long drouths, without any irrigation at all. It grows in our locality, and makes a very rapid growth—I think not much more rapid, however, than the soft maples that adorn the streets of Medina, and we think the maple the handsomer tree. The *catalpa* yields considerable honey some seasons, but it comes exactly at the time of the basswood flow, so that our bees seldom pay much attention to it.

KEEPING CELERY-PLANTS FROM RUNNING TO SEED IN THE SEED-BED.

If you don't want your celery-plants to go to seed, don't let them ask twice for a drink, at any stage of growth. M. GARRAHAN.

Kingston, Pa., Feb. 24, 1889.

I am well aware, friend G., that the weather has a great deal to do with successful celery culture; but I hardly think that lack of water explains all the difficulty. Almost every year when our celery-plants stand in rows in the field, while cultivating we find occasionally a stalk running up to seed. These are pulled out as fast as noticed. After a certain stage we see no more of it. It may be our Golden Dwarf celery that started to run to seed in the seed-bed did so on account of lack of moisture, at a critical time. I am inclined to think that this is the case, for at one time it seemed as if they were all going to seed. After I pulled out these and threw them away there was no more of it during the season. Perhaps the abundant rains accounted for the latter fact.

MEL SAPIT OMNIA.

JOTTINGS FROM AMATEUR EXPERT, OF ENGLAND.

WE have been holding the annual meeting of the B. B. K. A. at Jermyn Street, London, during the past few days, so I thought I would send you a few particulars. Hitherto no one has been eligible for election on the managing committee unless he subscribed 10 shillings per annum. Each member was entitled to one vote for every 5 shillings subscribed, and a life member by paying £5 down was entitled to 4 votes per annum as long as he (or she) lived. This may seem strange rules to you, and I will not go into the why and wherefore, but pass on with the remark that these rules are common to similar societies in England. For three years we have tried to alter this, and inch by inch, we are fighting the ground. This year we have carried the point that all and any members are eligible for election on the committee, whether they subscribe 5 shillings or more. The one-man one vote we could not carry, the rich subscribers having outvoted us. But we shall sharpen our swords for another year, and renew the conflict. I may say all this is done without party feeling; we manage to fight these battles and not lose our tempers.

Manufacturers of and dealers in bee-appliances are not eligible to act on the committee. How would that suit you? Hitherto we have kept them off by not voting for them, but now they must not be nominated. I protested strongly against such a rule being made, but it was, as the majority was strong for it.

County associations affiliated to the B. B. K. A. have hitherto sent a representative each to the quarterly meetings of the B. B. K. A., but these representatives have had no vote, and could only make suggestions, which the committee of the B. B. K. A. could please themselves about carrying out. We have now made these county representatives *ex-officio* members of the committee of the B. B. K. A., with full voting powers. I have enumerated these points as you have recently been altering the constitution of your N. A. B. K. A., and I thought they might interest some at least of your readers. There were several other matters considered at the business meeting, after which we had a "conversazione," and Mr. Cowan, who came over from Switzerland to attend, read a paper on

THE BEST HIVE.

Of course, he was in favor of the hive he has so long used, which bears his name, and is known as the "Cowan" hive. It certainly is the best for our climate and circumstances; but as I may say something about hives on a future occasion, I will pass on, to say the discussion that followed was most interesting. It is seldom that we get a subject so rudimentary for discussion as this; and for myself I am pleased that Mr. Cowan brought it on. Our usual bill of fare is some abstract theory or scientific problem that has some remote bearing on bee-keeping, while practical bee-keeping is left out in the cold to shiver, on such occasions.

WINTER AT LAST.

During the past month we have had a few cold spells, with snow and sharp frosts. In the day time on clear days the sun has shown out very warm, and drawn out the bees for a fly. Stores are getting very low in some of our hives, and breeding

has been carried on all winter, I believe, in many of them. Many scores of colonies kept by the poor are dying. One old lady, who is over 75 years old, and has kept bees all her life, and her mother and grandmother before her, cried to me last week as she told me all her bees were dead, and she had never known such a thing as to be without bees, all her life. She felt "quite lonely," she said. I fear many will be in the same position before June 1st, as bees went into winter quarters so very short of stores.

LADY BEE-KEEPERS AND WRITERS.

We are getting an exchange of bee-writers, it seems. Mrs. L. Harrison is to write for the *B. B. J.* monthly, Mr. Cowan tells us. Her name seems so familiar to us all on this side that she is counted one of us, and does not come at all in the guise of a stranger. We have several very successful lady bee-keepers in England. I beg pardon—I mean the United Kingdom. I must not forget that, especially as one from the Emerald Isle has recently sent me a most flattering invitation to pay her a visit. Would you like to hear something about our lady bee-keepers? If so, I must get their consent and go on a "ramble" and tell you what I may see while on my rounds. I must first ask permission, though; it is rare fun sometimes, let me tell you, when I go to see my bee-keeping friends. They will first say, "Well! is it A. E.?" If I say, "No, only Mr. S—," (ah! you thought I was going to write it, did you?) they then know what is said is sacred; but if I, on the contrary, say, "You had better beware," then they are sure to look keenly in the bee-papers. But our lady bee-keepers, allow me to say, are not like yours. It is not that they are more modest—the bare suggestion would rouse a storm about my ears among your ladies—but until very recently, at least, it has been the fashion for our women to be kept out of anything that savors of publicity, and our customs are so deep-rooted that very few indeed can be induced to step out into the arena of criticism and tell us what they know about bees, much less about themselves in any other sphere. In

MRS. CHADDOCK

you have a contributor who is unique; her easy, original style of dealing with personal matters is very charming to English readers who are not over-fastidious about conventionalities. But her courage in fighting the "professors" and some of their wild theories about evolution is especially charming to many of us who know how to rightly estimate much of what has been written in the name of science.

A BEAR-STORY.

I wonder how the grizzly bear knows where to find honey, and whether he is led by color or scent. Talking about bears and honey reminds me about a tale I heard the other day from Central Asia. It having been observed that several of the telegraph poles were dug up, a watch was set to catch the depredator, when it was found to be the work of a bear. This led to an inquiry as to the reason for the bear wishing to lay the telegraph poles to the ground. They were iron poles, and he could not climb them; and hearing the humming noise made by the wind in the glass insulators, it is supposed he imagined there was a bees' nest on the top of the pole, and so he dug the pole down to get at the honey. Perhaps Mrs. Chaddock can say if that was instinct or reason.

THOSE BIOGRAPHIES.

Well, before I close I wish to tell you how we like your bee-keepers' biographies by Dr. Miller. It is very interesting to read about all those whom we have known so long by name. The portraits make it doubly so. I was showing them to a friend the other day, and when he came to the editor of GLEANINGS he laughed aloud. On asking what was the cause, he said, "What a dunce I am! I see now his name is Amos Ives Root. I always thought he styled himself A. I. because he was a kind of 'double first,' just as the best steamships are classed 'A I' at Lloyd's shipping agency," and so he laughed again at his own folly, and said, "But he is A. I., for all that." AMATEUR EXPERT.

England, Feb. 25, 1889.

Friend E., your bear-story is a very good one—very ingenious the story is, whether it be true or only fiction. And so you have telegraph-poles made of iron, do you? That is something I never knew before. And so some of the friends across the water thought A. I. Root was vain enough of himself to call himself "A I." Why, the very thought of it gives me pain. I feel glad and proud of being one of the people—one of the great mass of humanity; but I never wish to be considered anywhere or by anybody any thing more than the commonplace individual which I am. If I thought it possible that anybody else might think so, I don't know but that I should write out my full name every time—Amos Ives Root. Thanks for your friend's concluding remark.

A. E. MANUM.

THE MAN WHO OWNS 700 COLONIES IN 8 APIARIES,
AND WHO IN 1885 PRODUCED 22 TONS OF
HONEY.

AUGUSTIN E. MANUM, whose picture is herewith presented, was born in Waitsfield, Vermont, March 18, 1839, consequently he was fifty years old March 18, 1889. When Mr. Manum was nine years of age his father died, leaving him only the inheritance of a sound mind in a sound body. At an early age he apprenticed himself to a harness-maker, and afterward continued in the business in the village of Bristol, Vermont, where his home now is, until he abandoned it for the bee-business. In 1859 he married Miss Rosilla M. Pierce, the beloved wife and kind mother whose death a short time since casts a shade of sadness over the home.

When the war broke out he enlisted in Co. G, 14th Vermont regiment, as a nine-months' man. He served at the battle of Gettysburg, where his comrades in line on either side were killed; his own gun was shattered, and he was hit four times.

In March, 1870, a friend desired to lend him "Quinby's Mysteries of Bee-keeping." Reading the book, his enthusiasm upon the subject was kindled, and he immediately purchased four colonies of bees and began the study of apiculture. Having a natural aptitude for the business, and a love for the bees, he was successful from the first. His apiary so rapidly increased, that, at the end of four years, when he had 165 colonies, he sold out his harness-business and began the pursuit as a specialist. At this time he was using a 4-lb. honey-box. Soon came a demand for a smaller package; and as sup-

ply-dealers were scarce, he determined to manufacture them himself. In casting about him for seasoned lumber of a proper thickness, he found, to his great delight, a quantity of poplar plank. The result was a lot of poplar sections, the first ever made. Mr. A. I. Root was much pleased with a sample sent him, and published a description of them at the time in GLEANINGS. This notice brought in inquiries and orders by the score, and Manum the bee-keeper became Manum the supply-dealer. His first order for sections from out of the State was from Mr. L. W. Baldwin, of Missouri, at \$11.00 per 1000. Soon the demand for these sections became so great as to call for a more rapid method of manufacture; and Mr. M., having purchased a mill with abundant water-power, invented a machine working automatically, which sawed the sections accurately and so smoothly that many im-



A. E. MANUM.

agined them sandpapered. The supply-business and the bee-business soon grew to such proportions that it was impossible to personally manage both, and the factory was, in 1884, sold to the present proprietors, Messrs. Drake & Smith. Since this time Mr. Manum has devoted all his energies to the production of comb honey, increasing his plant until his bees now number over 700 colonies in eight apiaries. He always winters his bees out of doors, packed in the "Bristol" chaff hive. For the eight years previous to 1887, his average loss in wintering for the entire time was only $3\frac{1}{2}$ per cent. He uses exclusively a frame about $12\frac{3}{4}$ x 10 inches, outside measure, which he considers the best for practical purposes in his apiaries. His hive, the "Bristol," is almost entirely his own invention, being specially adapted to the perfect working of the system upon which his bees are managed. In 1885 his production was 44,000 lbs. of comb honey, an average of $93\frac{1}{2}$ lbs. per colony, all made in twelve days from basswood.

Because of the failure of the honey sources the past season, about 14,000 lbs. of sugar syrup was

fed the bees to prepare them for winter. He still has much faith in the pursuit, although the past three successive poor honey years have told heavily upon his enthusiasm.

Mr. Manum has one son, a fine young man, just of age, who promises soon to be a great relief to the father in the management of his extensive apiaries.

Mr. M. is of medium height, with dark complexion, hair, and eyes. A kind friend, an upright gentleman, and a thorough business man, he has attained an enviable position among the bee-keepers of Vermont, where he is so universally known. His extensive operations, his uniform success, and his practical writings, have also given him a national reputation.

J. H. LARRABEE.

Larrabee's Pt., Vt.

Friend L., I well remember when Manum's samples of Vermont white poplar came into our office. We had been for some time making sections then ourselves. This white poplar "took the shine" off from any thing in the line of basswood so completely that at first I was inclined to feel a little bit jealous; but it did not take me long to decide that I would tell our readers the truth about it, no matter how much it hurt our trade. I do not remember the exact words of the editorial, but it was to the effect that friend Manum's white poplar was nicer than any thing we had ever made, and, I believe I added, nicer than any thing we could *hope* to make, unless we could get that same white poplar. In a little circular that came along with the sections, the printers had put it "popular" instead of *poplar*, and there was no little merriment about friend Manum's white "popular" sections; and indeed they were "popular" after my editorial went out. Years passed; and while attending the National Convention in Detroit, a large fine-looking man came up and put out his hand, and said it was a pity that, after all these years, he too could not have the pleasure of shaking hands with his benefactor. I asked him what he meant by "benefactor." "Why," said he, "Bro. Root, I am the man who made those white-poplar sections to which you gave such a boom by your kind editorial; and now I want to say to you, that, although I have not yet amounted to *very* much, what little I have done I owe greatly to that kind and disinterested editorial." And then there was a big laugh all round. When I wrote it I had no acquaintance whatever with friend M. I only knew that the beautiful smooth pieces of wood that almost rivaled white paper in whiteness were, both in workmanship and the quality of the wood, beyond any thing I had ever seen before. White poplar, from its nature, is not suitable for one-piece sections, therefore they must always be made in four pieces; and as the material is somewhat scarce it is not likely they will ever be furnished for much less than double the price of the basswood sections. The bee-keeping world, however, owe a debt of gratitude to friend Manum for furnishing the finest section, so far as I know, that has ever been made anywhere. Dr. Tinker, I believe, finds on the hills in his vicinity a kind of white poplar

that very nearly equals the Vermont poplar. It may be well to say, also, that, if the doctor's sections are lacking any in quality of material, they excel in *workmanship*, perhaps, any thing the world has yet produced.

BEE-FEEDERS.

FRIEND HEDDON'S COMMENTS ON SOME THINGS IN MARCH 15TH ISSUE.

NOTICE on page 216, in an illustration and translation from a French bee-journal, something regarding feeders. Now, while I have had considerable experience with feeders, both in feeding bees large quantities for wintering and feeding back extracted honey to finish thousands of pounds of sections, I wish to say to your readers that I found a feeder based on the principle of the one shown in the cut as in many ways unfitted to the instincts of the bee. In the first place, the two little feed-troughs do not afford sufficient space for the average colony of bees to do the rapid work required. Then there is no need of the wood feeder being lined with metal. Not one in twenty, if properly made of wood, when constructed as they should be, will leak; and if one does leak it will not leak outside the hive, but all within, where the few drops will be picked up by the bees and no robbing be incited. The only valuable principle I discover about this feeder is the reservoir plan, wherein the bees rise up, rounding over a lowered partition, taking the honey from the top, the reservoir keeping the feeding-troughs full, by force of gravity, the same as the stand-pipe waterworks system. Let me say to your readers, that it was not only "several years ago," but a good many years ago, that I discovered this principle. While I know it was original with me, I do not know whether it was prior or not. I think it was, for, so far as I have been able to discover, there is nothing in print touching any of the principles until after I had used it for several years, and also, I believe, described it in bee-journals. With this communication I inclose you an engraving and description of the feeder, and on the second page is clearly outlined what I claim as my invention, whether prior or not, not patented, I want you to understand. After reading it, you will say in your foot-notes what you believe concerning it.

UNPAINTED HIVES.

About fifteen years ago the same idea entered my mind in regard to painting hives, which I find in the article of G. M. Doolittle's, beginning on page 217. Upon the strength of my new supposition I made between thirty and forty hives, leaving them unpainted, and used them for several years, carefully noting results. I had lost quite a per cent of my bees with the winter disease known as bee-diar-rhea (the only winter difficulty, in my mind, worthy of mention). While I found, by actual experiment, that omitting the paint allowed the hives to become so dark in color that they drew the sun's rays, piling up the heat, making them very objectionable in hot weather in summer, and that the rain, so far as it could get at them, had caused them to become rotted at the joints, I found no difference whatever in regard to the successful wintering of my bees. It is to me another of the fine-looking theories which have to vamoose before experience. It appeared to my mind, before it re-

ceived my more careful attention and experiments, the same as it does to Mr. Doolittle's. In your foot-notes you mention the success of the chaff hive. Let me ask you to make this experiment: Take a colony of bees that you have managed all summer in Simplicity hives, along late in October, about a week or so before the bees cease to fly, and set them over into a chaff hive, and see how they winter then, after that disturbance. I have repeatedly noticed, that, when a hive is thus disturbed, especially after the brood-frames are opened and the combs interchanged, late in the season, these bees will not winter so well as those not disturbed. This says to me, "Pack your bees early." I presume you remember that I am radically an anti-chaff, or tenement-hive, bee-keeper. During summer management, all my hives must be very light and most readily movable, for I propose to work two hives with the same expenditure of time and muscle that is usually applied to one.

YOUR DOVETAILED HIVE.

Under this head, on page 234 I am pleased to learn that you will use the honey-board single bee-space, leaving it flat on one side, and the bee-space in the brood-chamber at the top; and in order to make this brood-chamber and the surplus receptacles readily interchangeable, you have made a bottom-board with a bee-space in that. That is exactly like my new hive. That is just what I did, as you will see by the cut I inclose. You will also notice the style of cleats I nailed on, which style furnishes a more solid base, and gives a narrow bearing to avoid crushing the bees. Now, if you had your brood-chamber in two sections, each containing a complete set of shallow frames, with side frames tightly fitting the case, but reversible at will, you would just have my new patented hive, if made and used as and for the purposes specified. I fear, friend Root, that your investigations and reasonings concerning hives will end up as it did with the honey-board. You will first oppose, then tolerate, and finally embrace the new hive in question.

Dowagiac, Mich., Mar. 22, 1889. JAMES HEDDON.

Thanks, friend H. Your first objection to the Miller-Warner feeder (i. e., if you included it with the one illustrated on page 216 of last issue) with us does not hold true in practice. We fed several barrels of syrup last fall, and, as a general rule, the bees emptied the feeders in a single night, no matter whether the feeders contained 5 pounds or 25 pounds of syrup. In some instances we filled the feeders entirely full (a capacity of 30 pounds) all of which was taken down and deposited in the cells in less than 12 hours. Is not this rapid enough feeding for all practical purposes? It is true, as you say, there is no need of lining such a feeder with tin; but if you will refer to our descriptive remarks, and to the engraving on page 818, for 1888, you will see that the feeder we manufacture is made entirely of wood. The great point we urge in favor of the Miller feeder is, that the passageway affording access to the feed is located directly over the center of the brood-nest, and this passageway is closed at the top by a board, so as to confine the heat. Accordingly feeding can be done in cold weather comparatively. That this is not mere theory, is evidenced by the fact that we have had colonies, by way of experiment,

empty these feeders, during freezing weather, in chaff hives.—As to the Dovetailed hive, we are pleased that you like the change which we have made in the matter of the bee-space. We did not take the idea of putting the bee-space on the bottom-board by means of cleats, from your new hive. We suppose you know it is an old idea. Years ago, *before* we adopted the bevel on the Simplicity hive, we used such a bottom-board.—In addition to what Ernest says, I will add I objected to such a bottom-board then and do now, because, if made in that way, the bottom-board and cover will not be exactly alike. The simple features of the Simplicity hive are, that there are only two pieces or two things to the hive—a body and a cover. The body is an upper story or a lower one, as you choose; and the cover is a bottom-board or a cover as you choose. When you have a stock of one you have a stock of the other.

THE UNITED STATES HONEY-PRODUCERS' EXCHANGE.

THE BENEFITS OF THE STATISTICS.

THE above association was organized under the auspices of the New York State Bee-Keepers' Association, in convention at Utica, N. Y., Jan. 17, 18, and 19, 1888. Its object is to furnish to its members prompt and reliable information as to the honey crop throughout the United States. Six or more reporters are appointed in every honey-producing State, who forward their reports to the Secretary on the first day of May, June, July, August, and September. The Secretary compiles these reports from each State (separately), and on the 10th of the month forwards to each member of the "Exchange" the reports from the whole United States. These statistics embrace the increased or diminished number of swarms going into winter quarters, loss in winter and spring, condition of bees at beginning of season, proportion of full crop of honey gathered, both white and dark, comb and extracted, the quantity of honey in the different markets remaining unsold, with price, etc.

The advantage of this information is too apparent to require any elaboration here. We would only say, that if you know the honey crop the market is yours, and you can secure prices in keeping with the amount of honey which you know is on the market. The "Exchange" has met with great favor among bee-keepers, several members present at Syracuse (Dec. 11—13), and others from abroad, among whom are many of the largest honey-producers in the United States, stated that the information furnished by the reports during the past season had been worth many dollars to them in the disposal of their honey, while other prominent bee-keepers pronounced it the best thing that ever came from an association of bee-men. Feeling assured that you will wish to reap your share of the benefits of these statistics, we extend a cordial invitation to you to join the "Exchange" by forwarding your membership fee to the Secretary, G. H. Knickerbocker, Pine Plains, N. Y., which will entitle you to the reports for one year; and also, if you can attend its meetings, to all the advantages of membership in the New York State Bee-Keepers'

Association, without further expense. The fee is one dollar per year, but it is hoped that enough bee-keepers will join so that the dollar will cover the cost of two years' reports, in which case you will receive the same for that length of time. Three or four hundred new members are yet needed to bring about this result. Each member will also receive, with the report sent out May 10th, a list giving the names and address of all the members and reporters. These statistics will not be furnished to the journals for publication, but will be sent to members only. We could not meet our expenses were we to make public our reports.

The "Exchange" has the indorsement and support of such well-known men as Dr. Miller, Dadant, Grimm, Manum, Crane, Cushman, Vandervort, Mason, Tinker, Pond, Cary, Root, Hetherington, Cook, Martin, Barber, Isham, Doolittle, Clark, Aspinwall, Van Deusen, Heddon, Taylor, Hilton, Cutting, Valentine, Demaree, Shuck, Foster, Secor, Wilkins, Muth-Rasmussen, and others equally well known.

P. H. ELWOOD, *Pres.*,
I. L. SCOFIELD, *Vice-Pres.*,
C. G. DICKINSON, *Treas.*,
G. H. KNICKERBOCKER, *Sec.*

We gladly give place to the above, and hope the bee-keepers will not be slow to give it their indorsement by way of subscriptions.

CAPT. HETHERINGTON

AS A BEE-KEEPER AND AS A SOLDIER.

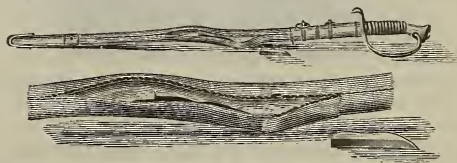
CAPT. HETHERINGTON was one of the founders of the Northeastern Bee-Keepers' Association (now the New York State Association), one of the oldest if not the oldest organization of its kind in the country, and, after the death of Mr. Quinby, its president. He was also present at the organization of the National society, and, later, elected president, but declined this honor on account of poor health. At one time he was associated with Mr. Quinby in giving addresses on bee-keeping before farmers' clubs in some of the principal towns of Central New York. He has a good command of language, and is a clear, forcible writer and speaker; and it is to be regretted that time and strength do not permit him to make a more free use of his gifts in this direction.

Socially, and as a host, he has no superior and very few equals in the fraternity; and many who read this will testify to the excellent treatment received at the hands of himself and his accomplished wife. The captain enjoys his home life and associations better than the most of men; and while he takes great pleasure in entertaining his bee-keeping friends, he does not always feel reconciled in having the privacy of his home invaded by the professional tramp, who, as soon as he purchases a swarm of bees, must hie away to the most celebrated authority for instruction instead of consulting some A B C book of bee culture, written for his benefit. Of late years Capt. Hetherington has sought to remain unknown, and to avoid notoriety; not, as he says, because he has nothing to communicate, but because it was necessary to economize in time and strength.

The captain is a regular attendant of the Presbyterian church, of which his wife is a member. He is also an officer and worker in the Sunday-school, which his three children, two boys and a girl, at-

tend. He likes a religion of a practical, working kind, that bears immediate fruit; that raises the fallen, feeds the hungry, cares for the sick. At the same time he believes there is a divine side to religion, with duties beyond those to our fellow-man, and with privileges and enjoyments and helps not found elsewhere. Capt. H. is an active temperance worker, and has been for many years a member of the Good Templar order. He also ranks well up in the Masonic order, and has been several times Master of Cherry Valley Lodge.

We must not fail to mention his splendid military record. October 12, 1861, he enlisted in Company D, 1st Regiment U. S. Sharpshooters, Col. Berdan commanding. It was from no boyish freak, but from a deliberate sense of duty, that he left the then most extensive bee-business in the land, and entered the service of his country. The spare time of the summer before had been spent in target-rifle practice, and his mother had made his underclothing previous to enlistment. But war is an easy thing to write about, but a terrible thing to deal with. Before one year had expired, of nine intimate friends from Cherry Valley who had entered the army, four were dead, four discharged for disability, and Captain Hetherington alone remained in the service. General Sheridan says, "Courage measures the power the mind has over the body." The captain stood at his post in a most dangerous branch of the service, when most men would have been in the hospital, or discharged for disability. His army surgeon has left on record the following tribute to his bravery: "On the 12th day of May, 1864, at Spottsylvania, he became very much exhausted by reason of chronic diarrhea, but declined being relieved from duty; and although wounded in the head he heroically remained in command of his company." And again, "On the 22d day of June, 1864, in action before Petersburg, Va., he received a serious wound in the hand, which disabled him from duty. At the time of receiving said wound he was suffering from chronic diarrhea, and was so weak and debilitated by it that he was a better subject for the hospital than the battlefield." This was the wound received when his sword was shattered by a bullet, and a piece of the weapon was driven through his hand. The engraving shows this piece lying by the broken sword.



THE SWORD WHICH SAVED THE CAPTAIN'S LIFE.

The portrait shows the position of the sword and hand. He had for the moment thrown his rubber blanket* across the hilt of his sword, and that over his shoulder, very much as a tramp would carry

*Before an engagement, an officer transfers to his darkey or servant all luggage-retaining only his rubber blanket and haversack, for use in case the aforesaid gentleman fails to put in an appearance after the fight. His blanket is made into a small roll and tied at the ends, then carried across his shoulder and breast as a sash is worn. In hot weather this is oppressive; and for temporary relief, although in the midst of a hard fight, the captain had thrown his rubber across the hilt of his sword, and that across his shoulder.

his pack. Providentially the bullet, so well directed, found a lodgment in his sword and hand instead of his heart, which, you notice, lay just beneath. Major General Wilkenson, of the British Army, on seeing this sword, said that he had seen many of the heirlooms of prominent British families, and the relics sent home from twenty years of active service, and added, "Among them all there are none that I consider as fine a personal relic as this broken sword." The captain threw this away as being of no further use to him; but it was preserved by his men. He also received a gunshot wound in the shoulder, in the second battle of Bull Run, Aug. 29, 1862. Entering the service a private, he came out a captain, in that division of the army when a captaincy meant in some ways as



CAPTAIN HETHERINGTON DURING WAR TIMES;
THE POSITION OF HAND AND SWORD WHEN
STRUCK BY THE BULLET.

much as the command of a whole regiment would in some other branches of the service. A whole regiment of sharpshooters was seldom posted together; but companies were used instead of regiments. The sharpshooting service was a man-to-man conflict, and it required great care and skill in posting a company so that they would not be picked off by the opposing riflemen. The captain of Company D was killed in the battle of Gettysburg, July 2, 1863, and Lieut. J. E. Hetherington was recommended for promotion by Col. Berdan, from the battle-field. At the close of the Gettysburg campaign, an order was sent to the commanding officers of the army, to report to the Secretary of War the names of such officers and men as had distinguished themselves for bravery and meritori-

ous conduct during the campaign. The name of J. E. Hetherington appears in this list, and furnishes the best of proof that his promotion was well earned. While in the army the captain was in all the principal battles of the Army of the Potomac, besides many minor engagements which will never be recorded. He was discharged from the service, Sept. 20, 1864, by reason of disability from wounds received in action. For two years after, it was a question whether he would live; but he gradually regained a larger part of his former vigor.

In personal appearance the captain is tall and commanding, and looks every inch a soldier. Had our army been more largely composed of such men, the end would have come sooner, and general pension bills would not now languish. With more years, undoubtedly higher rank and greater honors had come to him. The bee-keepers of this country may feel honored that they have enrolled in their ranks one who has performed so distinguished service in the great contest.

Starkville, N. Y.

P. H. ELWOOD.

It was my good fortune to meet Captain Hetherington at a bee-keepers' convention in Cleveland, O., in December, 1871. This was only one year after the National Convention was started, and the bee-men of the United States were, a good many of them, comparatively slightly acquainted with each other. The only time I ever met father Quinby in person was at this convention. I believe it was the first time I got acquainted with Prof. Cook. A. F. Moon was there; also W. F. Clarke, Dr. Bohrer, Dr. Hamlin, Aaron Benedict, Gen. D. L. Adair, N. C. Mitchell, Mrs. Tupper, Mrs. Savery, and R. C. Otis. Rev. L. L. Langstroth was absent on account of illness, and so W. F. Clarke occupied the chair. The memories of that convention are very pleasant. Although there were a few things that marred the harmony, yet there were but a few. H. A. King and R. C. Otis were at that time having trouble about the Langstroth patent. Among the exhibits of bee-hives, Otis brought in an old weather-stained American hive, and in an ironical way commenced to extol its merits. As a matter of course, a part of the convention decided with Otis and a part with King, and there seemed to be great danger, for a time, of hard feelings if not hard words during the session of the convention. The president, however, happily suggested that we close the session by singing the doxology. The effect of that simple hymn of praise acted so like oil on troubled waters that I never quite got over it. I was not a Christian at the time, but I then got a glimpse of the power of Christianity to subdue and conquer evil. I did not have a chance to get much acquainted with Captain Hetherington. I can only remember that, when the essays were very long and dry, as you may remember they used to be, he acted somewhat like a schoolboy under restraint; and, if I mistake not, he once started a little fun, even during the reading of these essays. If we could get him to attend the conventions of the present time he would find a vast change in them from what they were 18 years ago.

HEADS OF GRAIN FROM DIFFERENT FIELDS.

DO WE NOT MANIPULATE OUR BEES TOO MUCH?

MY experience is, that most of us spend too much unnecessary labor on our bees. My plan of late years has been to have small hives, 7 and 8 combed L. and 8-combed Gallup (I use both kinds). Just as soon as the hives are full of bees I put on one crate of sections and let them swarm naturally. I have plenty of hives ready, and when I do not care for increase I double up two swarms to each hive, hiving them on two crates of sections, with metal queen-excluding board between the lower hive, filled with frames of foundation. In this way I always have good young queens in my old colonies, with plenty of stores for winter. Bee-keeping at the present low price of honey is like farming in the West—we must save all the labor possible. When I first moved to Kansas, some years back, I thought our Eastern mode of farming would do there; but I soon found it was money out. I soon changed, and followed the farming of the country—at least, such as those followed who made a success of it. So it is with bee-keeping—each section of country has to be learned, and then they must be run to suit.

T. G. ASHMEAD.

Williamson, N. Y.

Friend A., perhaps almost all of us perform unnecessary labor with our bees; and I have sometimes thought a great deal of hard laborious drudgery is constantly being done when there is no reason for doing it at all. Let me give you just one illustration. We have on our grounds a movable pig-pen, or pig-yard, made of galvanized iron wire. This pen is about 10 x 16 feet. When not in use for pigs, one of our boys uses it to confine sitting hens. A few days ago he raised up one side of it to let a sitting hen out that had been confined for a sufficient length of time. As he stood near the opening, she did not come out; therefore he called a stout man from his work, a little distance away, and asked him to hold up one side of the pen while he flopped his arms and “shooed” on the other side, to make biddy go out. Either from stubbornness or from lack of sense, however, biddy did not embrace the opportunity of regaining her liberty. At that time I came up.

“Why, H., why didn’t you put a stick under the edge of the pen, and go about your other work and leave the hen to go out of her own accord, when she feels like it?”

Both men went back to their work, without making any reply whatever. Now, I meet almost constantly with people who are doing useless work—holding a heavy burden, as in the above instance, where nothing is accomplished at all, or, perhaps better expressed, where the same result might be attained without taking time or lifting heavy burdens at all. I sometimes think that, if people were working for themselves, they would use their wits more; but when I see people who are working for themselves, and working hard to make both ends meet, I will find them using strength and time, a great part of their time, where

a little thought would have saved both. Applying this same thing to bees, we lose by neglecting them at times; and, again, we disturb them when the same thing could be accomplished without disturbing them at all. Necessity is not only the mother of invention, but it is a good school where we are bright enough to be taught by it.

TRANSFERRING IN WINTER SUCCESSFULLY.

In GLEANINGS, Mar. 15, I find John Hobbs writes about transferring in winter. I have had some experience in this line this winter. A neighbor of mine gave me the bees from a box hive if I would give him the honey—or, rather, take the honey for him. I drove the bees into a soda-box and brought them home. I weighed them when I got home, and there were 2½ lbs. of bees. I turned them loose on 4 combs of sealed honey and one comb without any honey. This was done Dec. 11, 1888. Feb. 4, 1889, the queen was laying well. At this time they are breeding well. This colony is as strong in bees now as any I have. My bees have wintered well, and are building up well; are gathering some honey from peach-blossoms.

B. C. GRIFFITH.

Griffith, N. C., Mar. 25, 1889.

Why, friend G., as I understand it you transferred only the bees and not the combs of brood. This is a very simple matter, and can be done at any season of the year; and, in fact, so can combs and brood be transferred if one is careful to observe all the conditions.

REPORTED DEATH OF A YOUNG LADY, FROM A BEE-STING, A MISTAKE.

In Notes and Queries, Dec. 1, you publish a report from an American journal, *Old Homestead*, that would be apt to lead the readers of GLEANINGS to believe that a young lady named Ella Baker was stung to death by a bee. Now, you know I don’t say that you believe such a thing could take place. I feel sure that you are of the same opinion as myself—that a single bee-sting could not possibly cause death to a human being. The report is just like a good many more (artificial section honey, for instance); when they have gone the rounds of several publications they don’t lose much, but rather the reverse. In the above case the bee-sting had nothing whatever to do with the young lady’s death. Being a close neighbor, just a question of a mile, and knowing the poor lady personally, also having to report on the case for several journals, I am somewhat of an authority. The doctor’s certificate stated that death resulted from convulsions and syncope—nothing about a bee-sting, you see. Her sister died at about the same age, in exactly the same manner, a few years ago. She was not stung. Miss Ella Baker received a sting on the side of her nose on a Friday morning, early. She did all her household duties during the Friday and Saturday. I myself saw her on Saturday morning. There was just a little swelling, but hardly observable, and no pain was felt beyond the first prick. On Saturday evening, late (9:30), she lay down on a sofa, and while there was seized with convulsions, and died almost instantaneously. She had been stung twice before, but it had no more effect upon her than the last time. There was no swelling observable after death; the undertaker particularly noticed this, and informed me of the same. This young lady has frequently been present when I manipulated

their bees. I used to drive them for her father when they wanted the honey, as they kept them in what in England are called straw skeps. I think the above facts ought to be known, as reports of death from bee-stings are apt to discourage would-be bee-keepers. It has also the effect of frightening one's neighbors (non-bee-keepers). I know that, just when the above sad event happened, people fought shy of my apiary for some time.

W. B. WEBSTER.

Binfield, Berks, Eng., Feb., 1889.

Friend W., we are exceedingly obliged to you. The above incident brings out vividly two important points; the first is, how such things increase as they travel from mouth to mouth; and the saddest part is, that the newspapers are so ready to give credence, or perhaps care so little whether a story be true or false, providing it is sensational. The second point is, that, through the agency of GLEANINGS, with the circulation it now has, we may find somebody in almost every neighborhood to give us a correct statement in regard to such reports. I think, friend W., you are a little too strong in saying that no one was *ever* killed by the sting of a single bee. We have had quite a few reports indicating that this may at times happen. In your own country, if I am correct, a man died, not long ago, from suffocation caused by the swelling produced by the sting of a single bee.

WINTERED WELL; THE TEXAS STATE BEE-KEEPERS' ASSOCIATION.

Bees have wintered well in this section. No loss as yet. For the last two weeks we have had some pretty spring-like days, and the bees were out in full force, gathering pollen from the elms. The horsemint failed last year, but the bees gathered an unusual amount of honey from the cotton bloom. As little as is said about it, the cotton is one of our best honey-plants. The Texas State Bee-Keepers' Association will meet at Greenville, Hunt Co., Texas, at the apiary of W. R. Graham, May 1st, 1889. Bro. Root will meet a hearty reception if he will come.

J. N. HUNTER.

Celeste, Texas, Feb. 28, 1889.

A SIMPLE AND EFFECTIVE WAY TO BIND BEE-JOURNALS AND OTHER PERIODICALS.

I have a way of binding my bee-journals that may be new to some of the readers of GLEANINGS. It was suggested to me by Mr. J. Y. Detwiler, of Florida, when he was at the International Convention at Columbus last fall. Get common safety-pins that are about an inch and a half long in the clear, and run one of the pins through near each end of the journal, and as far from the back as the pin, when shut, will allow. The pins can be bought for five cents per card, that has a dozen on. I use an Emerson binder till the year is complete, and then take the journals from the binder and put in the safety-pins so as to have the binder to use for the current year.

A REMEDY, BUT NOT ONE FROM A BOTTLE.

Another piece of information, though not relating to bee-keeping, may be of interest to young bee-keepers, many of whom may be tormented in "body (face) and mind" by pimples on the face, as most young men are at times, when otherwise in good health. After shaving, take a cotton or linen cloth and dip it in water as hot as can possibly

be borne, and apply to the face, and hold it there while it feels real warm, repeating three or four times each time of shaving. Young ladies who are similarly afflicted can try the remedy without shaving, if they like, say two or three times a week. Friend Root, this is a good medicine, and it doesn't have to be taken from a bottle either, so you needn't say any thing against it.

Auburndale, O., Feb. 28, 1889.

A. B. MASON.

Friend M., please give our friend Detwiler a vote of thanks. He is one of these odd geniuses, and it is just like him to have thought of a safety-pin to take the place of a binder. I feel proud of your compliment, doctor; that is, to the effect that I am a little suspicious of any thing that comes out of a bottle.

A PECULIAR CASE OF COMB-BUILDING; STEALING HONEY FROM HIVES.

After extracting from both sides of a thick frame of honey it was still very heavy, and I found a middle row of cells. I suppose it must have been built all on one side, and then, in moving it, have been given space on the hollow side.



I am a good deal away from home, and someone robs my bees. After cutting out the honey they scatter the frames anywhere, so that I have only three stands left, and expect to find those served the same way. I had lots of good dogs, but they are soon poisoned. I wish I knew how to catch the villain.

I wonder whether any of your lady correspondents have used a knitting-machine. Do they do good work?

I had a catalogue from W. Hill & Co., 100 West Madison St., Chicago, in which they quoted 20 cents per dozen for Willimantic thread. I sent \$2.40 for 12 dozen, and received a parcel on which I paid \$1.40 express charges, and it contained a miscellaneous lot of thread, but not one spool of Willimantic, and all so rotten that it is useless. I have written twice, and they do not reply.

GEO. E. HALES.

Lytle, Tex., Feb. 6, 1889.

Very thick combs often have a middle section, as in the diagram, friend H.—As knitting-machines are rather out of our line, I would advise those who know about them to answer direct. We give the name of the firm you mention, that others may not lose money in the way you have done.

CROSS HYBRIDS.

I have enjoyed your humorous sketches from time to time, and especially the Dutchman's Mule. If your artist could have seen me last spring transferring hybrid bees by drumming them from their old box-hive home, he could have had a sketch equally humorous. I knew they were *very* cross, so I fixed my smoker, as I thought, put on a veil and gloves, tied my coat-sleeves tight around my wrists, and, inverting the hive, placed the new one

on top, and commenced drumming. I had done so many a time with good results, but these were hybrids, and instead of going up they came out mad as hornets, and alighted on me until I was almost coated with them, biting and stinging the woolen coat I had on. I reached for my smoker, but, alas, it had gone out in a short time, and now the bees were finding a way under my coat, and stinging me very much. I stomped, kicked, and brushed them, but to no avail. They were flying around me furiously. I ran off about fifty yards, and found matters getting worse. I opened my coat, threw it back to discard it and bees together, forgetting it was tied around my wrists. There I was, coat off and behind me, hanging to my arms. If I had been handcuffed it would not have been much worse; at the same time, bees were stinging me about the neck and body. I finally liberated myself by tearing my sleeves badly, leaving the coat with many angry bees on it. I have these bees yet, but they are difficult to manage, even with the most precaution.

GEO. W. GEASLEN.

Oakland Mills, Md., Feb. 11, 1889.

Friend G., I can not understand, from your account of the affair, that you first smoked the bees thoroughly before inverting the hive. If you did not do this, you certainly ought to expect to be stung. Instead of waiting for the smoker to go out, you should have smoked the bees until you got them to fill themselves with honey before you did any thing with them at all. It astonishes me to read accounts of people being stung, much the way you were, just because they omitted or neglected, or did not know how to use the smoker. It is next to sheer madness for anybody to stir up a colony of bees first and then hope to quiet them down with smoke afterward. Of course, some colonies of bees at certain times of the year will bear it.

WHEN TO RENEW OLD COMBS.

I see that your journal is still improving, and is of vital interest to every one handling bees. I wish you to give an article on when to clean out old hives and start them anew. I have some in which the brood-comb is so old and thick that bees do not seem to want to raise brood in it, and will work above. If I cut it all out in the spring, will they make honey this season any more than a new swarm?

H. ROBERTSEN.

Henderson, Tenn., Feb. 21, 1889.

Brood-comb can be used a great many times, without being renewed; and when it must be renewed I would take out only the heaviest and thickest, and that which has many imperfect cells. To cut out all of the old comb at once would be a great mistake. It would cripple your bees, and the probability is that a great part of the old comb would be much better for brood-rearing than the new.

A COLONY OF BEES WITHOUT A HIVE, AND ATTACHED TO A LIMB IN JANUARY.

Inclosed please find a newspaper article about a swarm of bees in January. How is that for Southern Illinois? Bees had a fly almost every week this winter.

M. R. KUEHNE.

Olmstead, Ill., Feb. 11, 1889.

A few days ago, as Silas Coram was walking up the river-bank on the opposite side of the river

from this place, he discovered a swarm of bees hanging on the limbs of a bush on the brink of the river, about ten or fifteen feet above the water. At first he was inclined to think his optics were deceiving him; but on investigating the matter he found a good-sized swarm of bees apparently well satisfied with their place of abode, and almost as lively as if it were summer, or the mild days of early autumn. When our young friend reached home he reported his strange find to his father. A day or two after, the father and son took a hive to the place, and succeeded in hiving the whole swarm. To their astonishment they found a great deal of comb and considerable honey. The fact that there was honey at the place, proved beyond a doubt that they had been there several months. — *Galeonda Enterprise*, Ill., Jan. 31, 1889.

There is nothing very strange in the above. Bees cluster on the trees in California or in warm climates, and build combs sometimes, and stay several years. They also do it now and then all through the Northern States; and if they had plenty of old tough comb it would be nothing strange if they should winter over in such a locality. As our winter was very mild until the first of February, it is not surprising that they were alive and well. Possibly with plenty of stores every one would have come through had they not been disturbed.

DYSENTERY; NOT A SERIOUS CASE OF.

I wrote to you some time ago about dysentery, and now two other hives are a little daubed on the front. They seem to be healthy, and look well. Now, the thing is, I have been in the habit of going to see them very often, and arousing them. Would not that cause them to gorge themselves with honey, and cause them to come out and soil the outside of the hive? or is it possible that they have got the dysentery? The honey that they have was gathered from the Spanish needle. Is not that good to winter on?

WARREN WRIGHT.

Ludington, Mich., March 18, 1889.

As nearly as we can judge from your letter, we should say that you have been tinkering with your bees too much. The stores they had were not necessarily bad. If the hive is not soiled to any appreciable extent inside, you do not need to be alarmed. Bees in healthy condition will generally, in early spring, soil the outside of the hive to a slight extent.

THAT WINTERING PROBLEM, AGAIN; SUGAR STORES VERSUS BEES.

I am obliged to friend Heddon for his reply to my inquiry relative to the wintering of bees. He can winter a colony year in and year out as successfully as he can his buggy-horse, but thinks at too great a cost, and hopes that "I see the point." Yes, I even *feel* the point and own the steel. Briefly, Mr. Heddon, p. 90, objects to extracting honey which has a low value and slow sale, to feeding sugar which has a cash value. If his object were building up an apiary, would it not pay him even to extract closely and feed sugar? One dollar's worth of best sugar fed at the right time, bees carefully hid away, ought to winter them, when they surely ought to be worth five dollars in spring.

Beason, Ill.

J. HAMILTON.

You are right, friend H. It is very poor policy indeed to let bees starve to death, when, by investing in sugar to the extent of one-fourth their value, or less, they could be saved.

A FLOOD IN CALIFORNIA.

We have just had a flood, from March 16th to 17th; 10 inches of water fell at our house, making $22\frac{1}{2}$ inches to date. One mile further up the Sespe they got 13 inches. Some houses were washed away in Santa Paula. I suppose it was very disastrous in Los Angeles. The trains are stopped on account of washouts. The papers call the creek in front of our house the "Raging Sespe." The name was not appropriate when you were here; but if you could have seen it on the 16th, bounding and roaring like Niagara, you would not wonder at the Indians thinking there were "devils" in it. I am acting now on the supposition that we shall get a honey crop this season.

J. F. M'INTYRE.

Fillmore, Cal., March 18, 1889.

REPORTS ENCOURAGING.

NO LOSS IN WINTER.

LAST fall I had 42 good swarms. I packed part of them in fine oat straw and chaff, on their summer stands, and put part of them in my bee-cellar, which is in sandy soil, and properly ventilated. On the 18th inst. I took 5 swarms out of the cellar; on the 20th I took out 3, and on the 22d I took out the rest of them; and now on this 23d day of March I have just 42 good swarms, gathering pollen quite lively.

Coral, Mich.

L. W. ITZENHOUSER.

You ought to see the bees working on the red-maple bloom, getting honey and pollen.

Lincoln, Tenn., Mar. 13, 1889.

T. P. GILLHAM.

ONLY ONE DEAD OUT OF SIXTY.

My bees, sixty swarms, have wintered well. Only one is dead out of sixty. I had to move them out of our village 2 years ago, away up on a side hill, since which I have not done so well.

J. E. TODD.

Unadilla, N. Y., March 15, 1889.

WINTERED WITHOUT LOSS.

Bees have wintered here well this time. I wintered 93 on summer stands, and have not lost any; lost only 4 queens. Bees have been very busy on soft maple and elm. Red-bud is just bursting.

Alma, Ill., Mar. 19, 1889.

RICHARD EDMONDS.

COLONIES NEVER WINTERED BETTER.

I am happy to say that our success in wintering my bees has never been better. We went into winter quarters with 48 colonies; and to-day, March 18, 45 are in good condition; 3 died of starvation, which was my own fault. The bees are busy bringing in natural pollen, and the prospects for the coming season were never better.

FRED LEININGER.

Douglas, Ohio, Mar. 18, 1889.

EARLY POLLEN; THE GOLDEN BEE-HIVE.

Bees are gathering pollen now to some extent; mine are all strong, or seem to be, from the way they are at work; but I have not examined any of my hives. I have only lifted the top and taken a peep in. I am the only one who has any Italians in this county, so far as I know. Some others use a frame hive; it's a patent trap, and known to the trade as the "Golden" bee-hive. I make my own hives, and they are modeled after the Simplicity. I have sold some of them to owners of the Golden bee-hive after they paid \$10.00 for a right for it.

Moltke, Tenn., March 22, 1889.

S. L. MEDLIN.

WINTERED WITHOUT A LOSS.

My bees have wintered well. I have not lost any. In examining them a few days ago I found brood in all the hives, and plenty of food to do them until they can gather new honey. They were taking in pollen quite lively on Sunday, March 24.

Clachan, Ont.

E. J. PURCELL.

WINTERING AT THE AXTELLS'.

We have taken 30 colonies of bees out of the cellar, because we had so many in the cellar we could not keep it cool enough. Those taken out have wintered finely—better than those out of doors. They were gathering pollen nicely yesterday, the 19th, which is earlier than usual by two weeks.

Roseville, Ill.

MRS. L. C. AXTELL.

WINTERED WELL; THE STRONG DRAWING FROM THE WEAK.

I took bees out of cellar yesterday, 68 hives, one dead; examined them all to-day. They are in the best condition, cleanest and strongest I ever had them. They gathered some pollen to-day. One trouble is, that a good many hives catch bees that do not belong to them, making themselves strong at the expense of others. You may remember, page 11, Jan. 1, 1889, that I wintered this time with the heavy cloth mat removed, and only a piece of burlap over the front half of the frames. It is a perfect success this time, certainly.

Grinnell, Ia., Mar. 20, 1889.

J. F. WHITMORE.

LOOKING FOR A "WHOPPER."

At this date my bees have wintered well. They seem to be stronger than they were last fall. I went into winter quarters with 29 stands; one starved; another was queenless, and I united it with another colony, so I have 27 stands yet. They have plenty of stores, and are breeding rapidly. We have had a very mild winter. I winter on the summer stands, packed with chaff. My bees commenced gathering pollen March 16th. The prospect for a "whopper" this coming season is very flattering. There is an immense crop of white clover, or will be, if the season is favorable. It is looking fine at present.

Paris, Ill., March 21, 1889.

J. P. ADAMS.

FROM ONE WHO OWNS NEARLY 600 COLONIES, AND WHO SHIPPED COMB HONEY BY THE TON AS EARLY AS 1857.

The bees seem to be wintering well so far here. Of course, it is too early in the season to make a safe prediction as to the honey crop of the coming summer. We only know that, so far, they have wintered well. But it is in the next two months that we meet with our greatest loss, especially when cold bleak winds prevail during this time. I speak somewhat from experience, this being the thirty-sixth year of my experience in bee-keeping. As early as 1857 I was shipping comb honey by the ton. This was considered a large amount of honey to be raised by one bee-keeper at that time; but now it is not uncommon to ship many times that amount. I went into winter quarters last November with over 550 colonies. They seem to be doing well. For this I feel encouraged, and hope that they will continue so to do.

We are naturally looking for and expect a good season this year, from the fact that last season was a very poor one, there being no basswood bloom in this section of country, and the yield of clover and other kinds was very light.

Exclusive of the extracted, my comb honey weighed but a little over five tons when it should have been many more. As many of the writers for the journals predict a great honey season this year, I will join, and say I hope their prophecy may prove to be true.

J. R. TUNNECLIFF.

Van Hornesville, N. Y.

NOTES AND QUERIES.

We solicit for this department short items and questions of a practical nature; but all QUESTIONS, if accompanied by other matter, must be put upon a SEPARATE slip of paper with name and address.

THE 10 lbs. of Japanese buckwheat seed I got from you last season gave me 15½ bushels, measured. I had 4 acres of the silverhull, and got only 25 bushels from it.

JOS. F. BILDERBACH.

Rockwood, Ill., March 29, 1889.

Please tell me where you put the tarred paper in the chaff hives.

MRS. A. A. SIMPSON.

Swarts, Pa., Feb. 6, 1889.

[The tarred paper to our chaff hives is put between the bottom-board and the chaff. See further particulars in our A B C of Bee Culture.]

How many bushels of chaff will it take to fill five chaff hives?

V. BUXSER.

Justus, Ohio, March 14, 1889.

[We usually calculate on about three bushels of loose chaff, not packed, to the two-story hive, and a little over one bushel for the one-story hive.]

WHITE PAINT FOR HIVES.

I prefer white paint to any other color, and I have tried several. Bro. Root, go on with your Home talk, and may God's blessings rest with you and yours.

S. C. FREDERICK.

Arcadia, Kan., Jan. 24, 1889.

[The general testimony is with you in regard to white paint for hives.]

MELISSA.

According to your description of melissa, it grows sometimes to the height of 9 feet. I planted a little last year, but it didn't attain the height of one foot in good garden soil. Perhaps mine was a small variety. The seed wasn't from you.

Chandler, Ind., Feb. 21, 1889.

A. HEINE.

IMPORTED CARNIOLANS SHOWING YELLOW BANDS.

We are expecting a fair honey crop this season, from present indications. Our Carniolans are booming; have had them three seasons, and find them equal to the best. But our imported queen from Benton shows many yellow workers.

Avon, Ind., March 18, 1889.

A. A. PARSONS.

SETTING OUT A SMALL APIARY.

I want to lay out an apiary for about 25 or 30 colonies, and set out grapevines. How near, and in what position ought I to set them? I am building a board fence on the north side of my lot. The bees will be on the south side.

J. BILLS.

Southington, Conn., Mar. 23, 1889.

[The conclusion to the A B C of Bee Culture gives you the plan which we prefer to arrange hives, and also their entrances with reference to the points of the compass. Six feet apart is the usual distance from center to center. Some prefer eight feet. The latter distance means just so much more traveling to get through with a certain amount of work.]

STIMULATING BROOD-REARING.

I wish to ask you if I may begin safely to stimulate brood-rearing by means of the "Good" candy.

Dayton, O., March 5, 1889.

T. B. REYNOLDS.

[You can stimulate brood-rearing with the Good candy; but an easier way would be to give them sugar syrup. Good candy is used, as a general thing, for the purpose of shipping bees, and for winter feeding, although it can be used for other purposes.]

NO LOSS IN CHAFF HIVES; DOUBLE-TIER WIDE FRAMES.

I keep 50 colonies of bees. I winter on your plan, and had no loss last winter nor this. I am getting tired of double-tier wide frames. Can you suggest a better arrangement for the chaff hive?

A. G. MENDENHALL.

Economy, Ind., Feb. 23, 1889.

[Use single-tier wide frames, or the T super or the section-holders described in GLEANINGS for Mar. 1st.]

OUR QUESTION-BOX.

With Replies from our best Authorities on Bees.

All queries sent in for this department should be briefly stated, and free from any possible ambiguity. The question or questions should be written upon a separate slip of paper and marked, "For Our Question-Box."

QUESTION 118.—a. How large an entrance do you allow each colony when they begin to work in spring? b. When do you enlarge this, and how much?

a. Four inches wide; b. I do not enlarge.

R. WILKIN.

a. About 1½ inches wide by ¼ high. b. I enlarge as soon as the colonies get strong and weather warm.

GEO. GRIMM.

It varies with strength of colony, but it is small. Vary to suit size of colony. Make full size as colony gets strong and nights warm.

A. J. COOK.

a. 3x¾. b. As soon as the season becomes so warm that they seem to need more ventilation, or as soon as they begin active honey-gathering.

JAMES A. GREEN.

I allow as large an entrance as the bees will use, whether for one bee to enter at a time, or the full width of the hive, and I'm not troubled with robbers.

A. B. MASON.

Three or four inches; we enlarge the space according to the number of workers flying out. We raise the hive 2 inches in front in the summer in very hot weather.

DADANT & SON.

No set size, but it depends on the strength of the colony; usually as small as can be without danger of clogging. We enlarge it according to increasing strength of colony, and sometimes it is one inch by ten.

P. H. ELWOOD.

When in spring I contract my brood-chambers in order to stimulate breeding up, I contract the entrances to about an inch, and remove the blocks after the colonies have become strong, and more air is desirable.

CHAS. F. MUTH.

a. Just as small an entrance as possible, without retarding the bees while passing in and out. b. I follow no special rule in this, as much depends on the size of colony, weather, capacity, and style of hive, kind of honey we are working for, etc.

O. O. POPPLETON.

In all strong colonies, the full size of the entrance. Contract the entrance to weak colonies only, and in proportion to their strength at all times.

H. R. BOARDMAN.

I use the same entrance all the year round— $\frac{3}{8}$ x 12, and in summer I have to raise the cap, for top ventilation, otherwise bees cluster too much outside.

P. L. VIALLO.

I vary it according to the strength of the colony, and enlarge it as the season advances. During the best of the season I prefer them to have abundant entrance. The whole width of the front of the hive is desirable for the best stocks. L. C. ROOT.

a. If the colony is weak, I put up both triangular blocks, leaving about two inches of space, and if the weather is cold and *windy* I do the same by the strong ones, to prevent the wind from chilling the young brood. b. As the season advances and the weather gets warm.

MRS. L. HARRISON.

a. Theoretically, just as small as they can use without being crowded, but frequently it happens to be much larger. An opening two inches by one-half is likely to be large enough for a strong colony. b. When the entrance appears crowded it is enlarged perhaps once to double size, and when this becomes crowded they are allowed full width.

C. C. MILLER.

I use an entrance from $\frac{3}{8}$ to $\frac{1}{2}$ inch high, and clear across one end of the brood-chamber. I contract with L. blocks, according to strength of colonies; strength, not in relation to heat, however, but to defense against robbers. As the tendency toward robbing decreases and the colony becomes strong, I give them the whole entrance.

JAMES HEDDON.

My hives have six $\frac{3}{8}$ holes at the bottom of hive, and a hole one and one-half inches half way up, with a $\frac{1}{2}$ -inch hole cut into the side of the large hole. In the winter we leave all six of the lower holes open and the small $\frac{3}{8}$ -inch hole up the side open. When the weather gets warm, and the bees strong, then we open the $\frac{1}{2}$ -inch hole, which is covered with a button during the winter. E. FRANCE.

a. $\frac{3}{8}$ x $\frac{3}{8}$ for the very weakest, and from there up to 3 inches by $\frac{3}{8}$ for the strongest. b. Along as they need it, which is told by their being crowded for room to go in and out at the entrance, or when they are crowded out in hot weather. In summer I give the whole length of entrance, which is 13 inches long by $\frac{3}{8}$ high. With very large colonies, and at times of extreme heat, I sometimes raise the front of the hive an inch or more from the bottom-board.

G. M. DOOLITTLE.

Sometimes I let a strong colony have the whole doorway of $\frac{3}{8}$ x 10 inches. Others are all the way down from this to a little hole scarcely large enough for two bees to pass each other. It is not absolute time, but the weather, and the growth of the colony, that determine when to give more entrance. A safe rule is to give the working bees room to pass without delaying, and beyond that widen the door only when you see some inclination on the part of the indoor bees to remain outside. Sometimes a colony gets weak in old bees just before a big batch of brood comes out, and needs a decided closing-up for a few days, if a cold spell comes. E. E. HASTY.

I watched the answers to the above, to see if there were not somebody who had come to the same conclusion we have, that,

unless the colony becomes weakened, the entrance should be full size the year round, especially for a protected hive like the chaff hive. We once practiced contracting entrances in winter; but by keeping a careful record we proved unmistakably that colonies with the entrance wide open $\frac{3}{8}$ x 8 wintered better than where we fussed to contract them when the weather was severe. Of late years we have not tried to winter a colony so weak that it could not have full entrance the year round, and I think losses from wintering, and robbing too, would be greatly lessened if something of the kind were adopted; namely, wintering none but strong colonies, and these with entrances full width the year round.

QUESTION 119.—a. When bees are storing surplus, do you give any ventilation besides at the entrance? b. If so, where and how much?

No.

P. H. ELWOOD.

No.

O. O. POPPLETON.

a. Yes; raise the covers.

MRS. L. HARRISON.

No. I do not wish any other. I believe it is a damage.

A. J. COOK.

No. A good shade-board besides the entrance is ventilation enough.

A. B. MASON.

No, unless I raise the hive in front, as spoken of in No. 118.

G. M. DOOLITTLE.

I do not. I have tried it, and found more disadvantages than advantages by so doing.

JAMES HEDDON.

As stated in question 118, I use the same entrance, but raise the cap about $\frac{1}{2}$ inch for top ventilation.

P. L. VIALLO.

In very hot weather I give ventilation around the surplus arrangement, but the bees can get out only at the entrance of the hive.

GEO. GRIMM.

In tiering up my hives I ventilate at the upper entrance, as well as the lower. I secure comb honey in wide frames, in full hives, mostly.

H. R. BOARDMAN.

a. Usually. b. At the top of the hive, back end—about $\frac{1}{4}$ inch the width of the hive. I think it helps to keep down swarming, but it hinders work in the back end of super.

C. C. MILLER.

We give no ventilation except our regular entrance. We have a $1\frac{1}{2}$ -inch hole half way up the side, open in the summer, and the bees usually fly right into the hole; sometimes they catch on the side of the hive, and then run in.

E. FRANCE.

I consider no hive satisfactory without a good-sized ventilator in the bottom-board. In the warmest weather a ventilator 6 x 12 inches may be left entirely drawn. I also consider upward ventilation advantageous at times.

L. C. ROOT.

Not as a rule. If a colony seems to be suffering from the heat I raise the cover a little, the amount of ventilation given being according to circumstances. Usually, though, when I give any I give an abundance, often removing the whole cover.

JAMES A. GREEN.

When more air is necessary or desirable than bottom ventilation gives, I break loose the covers of the surplus boxes, scrape the bee-glue off, and put

them on again. Then I raise the cover about an inch, on the back part of the hive, creating thereby an air-passage over the surplus boxes.

C. F. MUTH.

a. I do. b. When the weather becomes so hot as to make bees lie out, or to endanger the melting of combs, I fold the duck-cloth cover forward 2 or 3 inches, off the frames, and leave the rear end of the board cover, that lies on it, elevated an inch or more by placing a stone under it.

R. WILKIN.

When we think that our 8-inch entrance is not sufficient, i. e., when the weather is warm and the crop begun, we place a block to raise the hive from its bottom in front. Besides, as our colonies are very populous we push back the surplus box, so as to get a current of air through the hive.

DADANT & SON.

Many of my hives have no provision for ventilation of the super; but my accepted way of making a hive is to have a crack a quarter of an inch wide or more run clear around the hive between the lower story and the super. To prevent the obvious ill consequences of this arrangement the whole top is covered with what I call a shirt, so the wind must first filter through muslin before it can blow in. Does the improvement increase the surplus? Well, it's pretty clear that extra ventilation has a chance to be of direct profit only when honey comes in so rapidly that the bees find difficulty in evaporating it fast enough. I am not quite settled in mind as to how often this happens—rather seldom in my local ity, I judge.

E. E. HASTY.

At one time I made many experiments in regard to entrances; and once I was very strongly decided in favor of a two-inch auger-hole in the front end of the hive. The bees then could fly right in and alight directly on the combs; and I would stick to the auger-holes now were it not that it hinders brood-rearing for some distance around the hole when the weather is severe. Other experiments in this line made me feel sure that the entrance should be at the bottom of the hive. And then I was very strong for a time in favor of having a large entrance right through the middle of the bottom-board, and I would still stick to this plan were it not for the difficulty of closing the entrance when we wish. All things considered, I made a compromise by pushing the Simplicity hive so as to project over the bottom-board. This enables you to adjust the entrance to the size of your colony, and you can do it in an instant, without any blocks or loose traps lying around. When you come to ventilate, you can make the bees go in the hive by giving them an entrance nearly half the size of the whole bottom of the hive if you wish. When hiving new swarms in hot weather I think this is very much to be desired. The objection to openings for ventilation, covered by wire cloth, is that they invariably get waxed up sooner or later.

QUESTION 120.—a. *What kind of an alighting-board do you prefer during the rush of incoming laden bees?* b. *Does it pay to have a bare spot of ground near the entrance, covered with sawdust or sand nicely patted down?*

a. A board 10 or 12 inches wide. b. I guess not.

MRS. L. HARRISON.

I prefer a board from the ground to a level with the alighting-board.

C. F. MUTH.

Any kind of board will do. Sawdust and sand are not as good, and too much trouble.

GEO. GRIMM.

Simply have the ground kept clean and clear about the entrance. It does pay.

H. R. BOARDMAN.

a. A slanting alighting-board is best. I think short grass is cooler than bare ground or sawdust.

P. H. ELWOOD.

a. A plain board projecting three or four inches. Others may be as good. b. Probably, if easily obtained.

C. C. MILLER.

a. Inclined wooden. b. I used to have it. I have exchanged to smooth closely mown lawn. This latter looks better, and is practically about as good.

A. J. COOK.

My entrances are all within 2 inches of the ground. I keep it clean in front of the hives. In the honey season the dry sandy soil can be graded up to the entrance.

R. WILKIN.

The alighting-board should be about one foot wide, and as long as the width of the front of the hive. This is sufficient if the grass and weeds are kept down.

L. C. ROOT.

a. Our bottom-board is at least six or eight inches, or more, longer than the hive. b. We take care to cut the weeds away in front of the hives, and, of course, all around. Sand is very good with a sloping apron.

DADANT & SON.

Besides the detachable alighting-board I use a slanting board from the ground to the alighting-board or entrance. I find sawdust dangerous around hives, as sparks from the smoker are liable to set it on fire.

PAUL L. VIALLO.

The only alighting-board my bees have is the projection of the bottom of the hive, $3\frac{1}{2}$ inches, and the front is close to the ground. b. Perhaps it does, but I like a closely cut lawn the best, after having tried bare ground and sawdust.

A. B. MASON.

a. Simply an extension of the bottom-board, the same extending six inches in front of the hive. b. I lay a cleated board down in front to keep the grass down, then when the lawn-mower is run in front of the hive this board is taken out of the way, so that all is smooth work.

G. M. DOOLITTLE.

I strongly prefer a level or slightly slanting board of generous size, with arrangements so that bees which fall to the ground can readily crawl up in. b. I am willing to take considerable pains to secure a clean dooryard for them. As to sawdust, I find myself getting a little out of conceit with it.

E. E. HASTY.

I prefer to have the bottom-board enough longer than the hive to form an alighting-board. I think it pays to have not only the ground near the entrance, but all around the hive, bare. My apiary is covered with slack coal, ashes, sand, etc., so thickly that grass or weeds seldom struggle through.

JAMES A. GREEN.

a. Any kind of wide board, so arranged as to avoid having sharp corners or crevices to obstruct the direct passage of bees into the hive. b. I prefer a spot of bare ground to either sand or sawdust, if there is some practicable way to keep it bare. Who can tell us how to do that cheaply and easily?

O. O. POPPLETON.

We don't use any kind of alighting-board; our bees are nearly all located on pasture ground. The stock keep the grass short about the hives. I don't think I should like sand or dry dust at the entrance of hives.

E. FRANCE.

I find it makes but little difference. I believe that bees soon learn to use the most convenient and natural places to alight, but I do not believe that the laden bee prefers any other alighting-place to a vertical surface. Watch them in a box hive with a front hole part way up the front side. See what a large proportion will alight on the side of the hive. It makes no difference whether that hole is at the top or bottom. As they come to the hive laden, with their abdomen hanging down, they delight to alight upon an upright surface. They are built just right for it, you know. Yes, sir, I always keep a bare spot on the ground in front of the entrance. I use sawdust in conjunction with the hoe.

JAMES HEDDON.

Now, in view of my answer to 119 I should say the best alighting-board in the world is a clean piece of ground, right round the entrance, covered with sand or sawdust. As the sawdust is liable to catch fire from the smoker, we have of late years adopted white sand. But this white sand would not answer at all unless you keep weeds from growing in it; therefore you want to make your sand white with common salt, about once a year, and then you have it. By no manner of means can we afford to have our bees knocked down and wearing their wings into ragged strings by buzzing them against grass and weeds when they are trying to get into their hive. Some have argued that the bees will get just as much honey, even if they do have to crawl through the grass and weeds. Please remember, friends, that a bee gathers honey until his wings are worn out; and I shouldn't wonder if the life of a worker were shortened almost half by buzzing against the grass and weeds I have seen in some apiaries, while trying to get into the hive. I do not like a board, because it warps under the influence of the sun and rain. True, it can be cleated; but even then the sun will pull the nails out, and toads and spiders, and may be snakes, will get under the board. The sand and salt make a clean job of it. Some experiments have been made with cement; and in California, where they do not have any frost, I think it would answer admirably. A nice flat stone, with the bottom-board of the hive lapping on the stone, so no grass or weeds could get between the stone and the bottom-board, would do splendidly. I am not sure but that we could get pieces of sawed flaging, one foot wide and fifteen inches long, cheap enough so they would be worth all they cost. You would have an entrance and dooryard then that would last a lifetime. The cold stone might give the bees the toothache on frosty mornings, unless it be true that they never fly when the stone would be cold enough to be disagreeable. Friend Heddon's reasoning is good; but I do not like that hole in the front end of the hive, because it chills the brood-nest; and when the same hive is used for an upper story, you have an entrance where you do not want it.



Every boy or girl, under 15 years of age, who writes a letter for this department, CONTAINING SOME VALUABLE FACT, NOT GENERALLY KNOWN, ON BEES OR OTHER MATTERS, will receive one of David Cook's excellent five-cent Sunday-school books. Many of these books contain the same matter that you find in Sunday-school books costing from \$1.00 to \$1.50. If you have had one or more books, give us the names that we may not send the same twice. We have now in stock six different books, as follows; viz.: Sheer Off, Silver Keys, The Giant-Killer; or, The Roby Family, Rescued from Egypt, Pilgrim's Progress, and Ten Nights in a Bar-Room. We have also Our Homes, Part I., and Our Homes, Part II. Besides the above books, you may have a photograph of our old house apiary, and a photograph of our own apiary, both taken a great many years ago. In the former is a picture of Novice, Blue Eyes, and Caddy, and a glimpse of Ernest. We have also some pretty little colored pictures of birds, fruits, flowers, etc., suitable for framing. You can have your choice of any one of the above pictures or books for every letter that gives us some valuable piece of information.

BEES IN THE CELLAR DID THE BEST.

Last fall my pa packed 59 swarms of bees for winter. He had 38 in the cellar and 21 outdoors. He lost 2 of those that he left out. Pa says it seems as if those he put in the cellar almost doubled. I have a little brother. He will be 3 years old the 10th of April. He is a dreadful little mischief. Sometimes I help pa extract honey. The name of his extractor is "Novice," and he says that means you. In the spring of 1886 he bought 20 colonies of bees of Mr. Hunt, of Bell Branch, Mich., and we commenced to take GLEANINGS again, and I guess we always shall. I like the little letters and your travels. Ma likes Our Homes, and pa likes it all. That kite I got of you is almost as good as new.

Starville, Mich.

MABEL M. COOK, age 9.

THAT BABY SISTER.

Yesterday, Feb. 22, the bees had a good cleansing flight. Papa says they have consumed more honey this winter than ever he knew them to do before, and it has been a mild winter too. Upon examining them yesterday he found a great many colonies short of stores, and two had starved. Mr. Root, the notes that you have given us in GLEANINGS of your trip to California have been very interesting. Mamma reads Our Homes to us Sunday evenings. I like to see the pictures of the beekeepers. Why not give the picture of your little boy Huber? I should like to see him, and pinch his little fat cheeks. I can remember him as I saw him a little baby. He had just learned to walk. I have a little sister, 26 months old to-day, and she weighs 42 lbs. She is just as dear a darling as can be.

GERTRUDE SEABRIGHT, age 9.

Blaine, Belmont Co., O., Feb. 23, 1889.

HOW BEES PROTECT FRUIT, AS TOLD BY A LITTLE GIRL.

My uncle has 30 swarms of bees, wintered in chaff hives, doing well. He has mulberry-trees in the yard with them, and they have berries on, and the wild canary likes the berries as well as I. Uncle has one tree among the bees, and the birds did not touch them. It was full of berries, and from the others we had to shoo the birds off. Auntie says she is going to have uncle put a hive under every tree, and that will be seven, and see if the bees will

keep them away as it has from that one. I go to school. Auntie has a little dog. His name is Fido. His wool is as white and long as that of Mary's lamb; and everywhere I go he is sure to go. I tell him the bees will sting him if he doesn't look out.

OLLIE AYERS, age 8.

Wallaceburg, Ont., Mar. 23, 1889.

Very good, friend Ollie. I think Prof. Cook can tell us something about bees frightening the birds away, and this suggestion of yours *may* prove to be of great value.

"OUT OF THE FRYING-PAN INTO THE FIRE."

My papa has between 50 and 75 swarms of bees. He and I hive the bees in the summer when they swarm. Last summer papa said he would give me 25 cents for every swarm I would hive without help. I got between 3 and 4 dollars. I had a veil that I put on sometimes when the bees were cross. My papa's bees are Italians and Carniolans. He gave me a swarm last summer, but it died. I like bees very well when they do not sting me. Once I got a sting on the elbow when I was up in the top of a large cherry-tree shaking some bees off from a limb of the tree. I jumped, and landed in a bunch of brier bushes.

CHARLES H. MASON, age 12.

Mechanic Falls, Me.

Why, friend Charlie, we don't believe you bettered yourself by jumping, especially since you landed among the briers. A bee-keeper must learn to "grin and bear it."

KEEPING THE BEES IN WITH SNOW.

Papa moved our house down on the road last September, and our barn too. He did not get his bees down here till the 27th of February. There was some snow on the ground. Papa put some snow in front of the hives where the bees came out. It had begun to thaw, and the bees came out of the hives after he brought them down here. Papa has 18 stands of bees. He has had but one stand of bees die this winter so far, but it did not freeze to death. It did not have enough honey. Papa had good success last summer.

BERT PRESNALL, age 13.

Marion, Ind., March 1, 1889.

But you don't tell us whether any of the bees that got out went back. We should presume that some of them, at least, must have gone back to where they used to live, and died there, because they hadn't any hive to go into.

BEES WORKING ON RED ELM; MAKING THE RIGHT KIND OF A START.

I hope you will forgive a little boy for slipping a note into papa's letter while he is out making a hot-bed. I want to tell you about our bees. I was out walking with brother Ernest (named after Mr. Ernest Root) and mamma, when I heard such a roaring and humming I stopped to listen and ask mamma what it was. She told me to look at a large red-elm tree just in front of us. It was in bloom, and I think every bee out of papa's 30 stands was on or around the tree. They were so high I could not tell what they were gathering. My little brother and I are going to try to be good men when we are grown. We both say our prayers every night, and try to mind what we are told.

WILLIE E. BARNES.

Hickman, Ky., March 14, 1889.

Bees do work on the elm, and it is quite a sight to see them too. We are glad you and

your brother have started right. We hope you will keep right on just so all your lives. If more of the boys in the land were making such a *good* beginning we shouldn't have so many bad men, should we, Willie?

PAPA'S FRAME-HOLDER.

My papa, finding the necessity of some kind of receptacle for holding the brood-frames after removing them out of the hives in the fall, in preparing them for packing for winter, has invented what he calls a frame-reel, of which I send you a drawing. He has it in one corner of our honey-house. It does not take up much room. It consists of four upright posts and 16 side-bars for the frames to rest on. The reel revolves on two pivots, one on the floor and the other in the ceiling. Each tier holds 18 Simplicity brood-frames, or 144 in all.

CHAS. SEABRIGHT.

Blaine, O., Feb. 25, 1889.

Your papa's device is very ingenious, and we are sure it will do nicely. It should be made strong, so as to hold combs filled with honey. After all, we should rather prefer to store the combs away in Simplicity hives, stacked up. Then if robbers *should* get into the honey-room they can't get at the combs. Hive-bodies are convenient; and whenever there is a surplus of combs there is a surplus of bodies.



JUVENILE POETRY.

Oh! here comes the honey-bee,
With rich and prudent air;
He has worked hard all summer,
Among the flowers fair,
And filled his hive with honey
From bottom to the top,
So that, when winter comes,
Then he starveth not.
But the winter is coming,
And he must be stored
In the nice warm cellar,
Away from the cold.
But he has prepared for it
All through the summer long,
And did not sit idle
As the lazy drone,
But went to work in earnest
Among the flowers fair,
That bloomed so freshly
With fragrance rich and rare,
So that when winter comes
With its wind and snow,
That he should be prepared
In the warm cellar to go.
The bee is very useful
In odd and different ways,
So then we should be thankful
While he with us stays.

KATIE M.

The poetry above is not *entirely* faultless as to measure and meter; but as it bears the stamp of originality of a little girl, we gladly give it a place.

TOBACCO COLUMN.

CONDITIONS UNDER WHICH WE GIVE SMOKERS TO PERSONS WHO STOP USING TOBACCO.

First, the candidate must be one of those who have given up tobacco in consequence of what he has seen and read in this department. Second, he promises to pay for the smoker should he ever resume the use of tobacco in any form, after receiving the smoker. Third, he must be a subscriber to GLEANINGS. Any subscriber may, however, have smokers sent to neighbors or personal acquaintances whom he has labored with on the matter of tobacco-using, providing he give us his pledge that, if the one who receives the smoker ever uses tobacco again, he (the subscriber) will pay for the smoker. The one who receives the smoker in this case need not be a subscriber to GLEANINGS, though we greatly prefer that he be one, because we think he would be strengthened by reading the testimonials from time to time in regard to this matter. The full name and address of every one who makes the promise must be furnished for publication.

TOBACCO, AND ITS CLOSE CONNECTION WITH WHISKY; A LETTER FROM ANNA B. QUILLIN.

MR. ROOT:—Ever since I became acquainted with GLEANINGS I have watched with a great deal of interest your determined but somewhat novel warfare against the use of tobacco. It has always seemed strange to me that so many people would indulge in the use of it, when it is not only useless, but expensive and injurious also. Many of those who are habitual chewers make themselves positively repulsive by their carelessness and utter disregard for cleanliness, while many who smoke make themselves equally disagreeable and offensive by puffing their smoke into the faces of those who not only dislike it, but are sickened by the odor. And did you ever notice how tobacco and whisky go hand in hand, as it were? Wherever intoxicating liquors are sold, there you will always find cigars. When you see men coming out of saloons, you generally see them puffing at a pipe or cigar; and though a great many good people indulge in tobacco and do not use intoxicants, yet those who are regular drinkers are almost invariably slaves to tobacco. The old adage, "An ounce of prevention is worth a pound of cure," might well be applied to this subject, for it would certainly be much easier to avoid learning the use of tobacco than to break off from the habit after it has been acquired, for it is acquired. I have heard many men give their experience on that point, and they invariably agreed that they "had to learn to like tobacco." But when the habit is once formed, people generally become slaves to it; and if the chains are ever broken, it is not until they have had many a sharp and severe struggle for their freedom. And the same may be said of those who indulge in intoxicants. I think the great hope for the future is to teach the young people and children the injurious effects of tobacco and intoxicants on the system, and thus help them to avoid forming evil habits that are proving a curse to humanity.

There is a little rhyme which may be new to some of the readers of GLEANINGS; and though it is not very elegant poetry, it contains a great deal of truth. If I am not mistaken, it was composed by a Methodist minister; but at any rate the gentleman had an intense dislike for tobacco, as the following lines will demonstrate:

Tobacco is a filthy weed,
And from the Devil did proceed.
It spoils your breath and soils your clothes,
And makes a chimney of your nose.

I know one district-school teacher who took pains to teach those lines to every boy who went to school to her, and I believe such teaching would not be without some good results. When our bodies are

the houses we live in, should we not try to keep them pure and clean, instead of polluting and destroying them? "Know ye not that ye are the temple of God?" "Know ye not that your body is the temple of the Holy Ghost?" ANNA B. QUILLIN.

Ipava, Ill., Mar. 12, 1889.

TOBACCO FORBIDDEN TO BOYS.

The 12th of the month is a little late to be reading the last GLEANINGS, but I was reading Mrs. J. B. Ratcliffe's letter, and I wanted to add my mite on the subject. I say, abolish strong drink first, and tobacco very soon after. We have a law in our State, forbidding the sale or gift of tobacco to boys under 16 years of age, under a penalty of \$20 for each offense; but it is poorly followed, I fear. I represented our town in the last meeting of supervisors, when there was a bill of \$3.50 for tobacco for the use of the occupants of the poorhouse. The next morning I offered a resolution forbidding it to be furnished at the expense of the county. It carried by a two-thirds vote, men voting for it who were chewing and smoking when they voted. I think it is one of the causes of pauperism, therefore we should not supply it to the poor. You can enroll my name as one in the army to fight King Alcohol and Prince Tobacco. We expect at this session of the Legislature to get the privilege of county option, and then we will free our county of the curse of strong drink.

Our bees were foraging for maple sap or any thing in their line, this March 12th.

Philo, Ill.

M. L. BREWER.

AN INJURY TO HEALTH, AND A DISGUSTING HABIT.

A brother-in-law who had chewed tobacco for many years was obliged to leave it off because he came out with several cancers. He found, when he tried in earnest, he could leave it off; since then his health has greatly improved; but the cancers, as soon as cured in one place, come out in another.

Another acquaintance of mine, when cutting open a plug of tobacco, cut open a big tobacco-worm that had been mashed in with the tobacco.

A few days since I called at a store, and the proprietor had long whiskers, down which was drizzling tobacco-juice over at least one-third of his entire lower whiskers. What a sight!

Roseville, Ill.

MRS. L. C. AXTELL.

A USER OF TOBACCO FOR 30 YEARS QUIT.

I am glad to say, after over one month's experience, that, by the help of Christ, I have quit the use of tobacco in every way after I had used it for over thirty years. I can not say that I was influenced solely by GLEANINGS, but by seeing that others were quitting. I made a strong resolution, God helping me I would not only try, but I *would* quit. And I am surprised how easy it has been. I believe that *anybody* can quit who will lay it away and ask God for his grace to aid and strengthen. I will say here, that I am well convinced that, if I had never used tobacco in any form, I should have been a better man mentally, physically, and financially; and I advise everybody to quit the bad, filthy, expensive habit. Now, Mr. Root, if you think I am worthy of a smoker, if you will send me one I will pledge myself that, if ever I use tobacco in any form I will pay you the price of the smoker. I am a constant reader of GLEANINGS. We have been very much interested in your report of your travels.

T. N. STOKES.

Darlington, Ind., Feb. 6, 1889.

MYSELF AND MY NEIGHBORS.

For as I passed by, and beheld your devotions, I found an altar with this inscription, TO THE UNKNOWN GOD. Whom therefore ye ignorantly worship, him declare I unto you.—ACTS 17:23.

THE GARDEN OF THE GODS.

IT seems to me that the peculiar surroundings at Manitou strongly tempt one to think that he is in many respects in an enchanted land. The strange, grotesque rocks which I have already described, the springs that bubble forth delicious, sparkling, pungent, effervescing beverages; the sight of winter all around and a little above you, while you stand in a valley of perpetual summer, rather encourages the idea. When I started off on my walk that morning I was watching anxiously every foot of the way, to see glimpses indicating my approach to the Garden of the Gods. I do not quite like the name, for it sounds to me a little irreverent; but I can readily imagine that the discoverers of this strange

Arizona, of the work of the winds and water in wearing away rock. Some convulsion of nature during former ages had tipped the stratified rock up edgewise; then the whole had been covered with a debris of sand or soil, until the rocks standing edgewise were submerged. Now, if it were possible that some spring or other agency should cause a deposit of iron on the surface of this raised soil, so as to form a capstone of a yellow stratum, which became hard, and, after all this had taken place, the winds and floods should then wash away the soil so as to leave these rocks, that were originally turned edgewise, standing up above the soil, with the iron-ore deposit resting on their points, I can readily imagine how Monumental Park and the Garden of the Gods, should be produced by Nature's workings.

The road is well traveled along here, for excursions from Manitou go out to the Garden of the Gods almost hourly, and therefore my road was an easy and pleasant one, although it was a good deal up hill and down. In turning abruptly through the evergreen-trees, which lined the road almost



"THE HAPPY FAMILY," MONUMENTAL PARK.

locality felt as though they must have some name for the strange objects that began to meet my view. One of the first things that attracted my attention was some queer rocks sticking out of the ground, looking more or less like monuments of some rude sort, or tombstones of some former age. Pretty soon, on the summit of a little knoll among the bushes, I caught a glimpse of some of these queer monuments actually capped. See cut above.

As I came around a curve in the road, so as to get a better view, I could hardly believe my eyes when I saw three of these pedestals united by a cap that formed a bridge from one to the other, as seen above. The three seemed to be supporting on their apex this piece of rock as if it were a log, or may be a human body, suspended aloft. I noticed at once that this log, and, in fact, all of the cappings, were of a different-colored stone, indicating that they were harder; and then I remembered my studies in

its whole length, I came suddenly upon what is called the Balanced Rock, as seen on next page.

As one lifts his eyes and gazes upon this ponderous stone, as big as a small meeting-house, he involuntarily starts back for fear it will tip over on him; and it took me quite a little time to gain assurance enough to walk boldly up and take hold of the rock to see if I could not tip it out of its place. Perhaps I should remind our readers that these pictures are true to life, for they were all made from photographs, by the new Ives process. As one sees the fleecy clouds float along the sky above the tree-tops, and above this rock, he is almost sure to imagine that the rock is swaying one way and the other, ready to roll on him and crush him to atoms. In fact, those who are familiar with the objects here have a sly trick of telling people, especially ladies, that this great rock sways to and fro, as the wind blows light or strong. After they have made many exclamations

of surprise, somebody begins to smile, and then there is a big laugh all round, to think how easily they have been humbugged. I hardly need tell our readers that all the lifting I could do did not disturb the great stone from its poise where it has rested for so many ages. The stones and rocks in this vicinity are much like those in the region of Mammoth Cave. They are more or less soluble in water; and as the rain trickles down it dissolves enough of them to give the water a plain color, so a great many of the streams are red, or yellow, on account of the chemicals they have dissolved from the rocks. This red, or yellow color, I believe, is mostly owing to the salts of iron. The Indian name for yellow is "ute," therefore we have Ute Cañon, Ute Mountain, and Ute Springs. The Ute Springs have enough



THE BALANCED ROCK, IN THE GARDEN OF THE GODS.

iron in them to give a slightly sour taste, not unlike weak lemonade; and the presence of the carbonic acid, to make the water sparkle, and give it the delicious snap, makes one almost ready to acknowledge, as the Indians used to have it, that the Great Spirit had given mankind not only a delicious beverage, bubbling up from the bowels of the earth, but a beverage that heals diseases while it refreshes. Now, Dr. Mason intimates, somewhere in this issue, that I am rather averse to any sort of healings that come out of a bottle. I want to tell him that I begin to have faith just at present in the virtues of Manitou spring water, even though we do have to bottle it up at the

springs and ship it by the carload to distant places, where there is demand for it. Before we go on, let us look back and say goodbye to our friend the Balanced Rock. The monuments and pillars of the Garden of the Gods are scattered over perhaps a mile or two of ground. Some visitors have been disappointed because nature did not arrange them all in a group so they could be seen without traveling. I confess, however, that I rather like the idea of having them burst upon my view as I climbed hills and descended into valleys, one at a time.

The next thing was the Needle Rocks and the adjacent spires, the names of which I have forgotten—see next page.

The three rocks called the Needles are seen on the left. They are thin flat stones that stand straight up, perhaps a hundred feet or more high. Some think there is nothing to suggest needles. In fact, you might think them one, instead of three rocks; but when you get along to just the right point, as you look at them edgewise toward the sky you will see that they are entirely separated, clear to the ground, and all you notice is three thin spires, so frail you are tempted to think they must be sheet iron or they would be broken off by the wind. These three once composed a solid rock, sticking up straight toward the sky. As this rock, however, was composed of strata of different degrees of hardness, the wind and rain have dissolved out the soft portions, leaving the needles, or leaves, rather. Right back of the horse and buggy you will notice another strange pile of rocks, one of them reaching like a single tall spire away up into the sky, almost. You can get an idea of its height from the size of the horse and buggy. At the left of this square block, not unlike the ruins of some building, is another of these queer bridges. In this case, one of the spires has evidently broken off and fallen on its neighbor. The rocks a little further on, at the right hand of the picture, are full of openings not unlike the needles. In our next picture we have a view of them from the other side. The horse and buggy again give you something of an idea of their height.

And now we stand right in the center of the sacred ground. I say "sacred," because it seems to me that almost any child of humanity must feel like uncovering his head as he looks in awe and wonder at these strange and curious structures towering up like mountains. The picture gives you a faint glimpse of the roadways that have been made here and there in the sand. As you push your foot into the reddish-yellow soil, or, rather, gravel, you are impressed with the idea that these rocks, at some remote time, must have been very much higher than they are now, and that the ruin of their former greatness is what makes this rocky gravel that covers the whole landscape all round about. A little distance away is a hotel that is kept up in summer time. At the time of my visit they did not receive visitors. The lady who had the place in charge kindly answered my questions, however, pointed out the places of interest, and supplied me with the photo-

graphs I have given you on these pages. Most of the rocks have been named; and people imagine that these rocks bear likenesses to different animals. As the rocks and cliffs are all variegated with different colors, mostly red and yellow, various landscapes and pictures are pointed out. These,

er, horses, passengers on top and inside, and luggage behind."

I smiled somewhat as I turned back, and now for the first time allowed my imagination to see in the coloring of the rocks what she had described. I have from childhood had a very vivid imagination, and can re-



NEEDLE ROCKS, GARDEN OF THE GODS.

however, draw so strongly on the imagination that few people can see them until they are "educated up to it," if I may use the term; and various maps and paintings adorn the reception-room of this hotel, giving an exaggerated view of the paintings to be seen on the rocks. For instance: Said the lady,—

member as long as forty years ago of seeing pictures in the clouds, and, in my mind's eye, building up a romance that so absorbed me it was like a fairy-tale or a story from the Arabian Nights; and when I found here at the Garden of the Gods that they were making a science, almost, of this matter of seeing wonderful paintings where the ordi-



VIEW OF THE INTERIOR OF THE GARDEN OF THE GODS.

"Can you see that stage-coach just on the summit of yonder range of cliffs?"

I was obliged to confess that I could not see any stage-coach at all—nothing like it.

"Well, now, turn around and look at the picture up there on the wall. You see there the old-fashioned stage-coach with its driv-

nary individual saw nothing at all, it made me smile again. For the first time since my long walk in the morning I began to feel that it was dinner-time; but my good friend told me there was no remedy. They were not prepared to give anybody a dinner, so I had the prospect of two miles and a half be-

fore dinner. I asked my friend if I could not shorten the distance by going crosslots. She said she believed the traveled road was considered the quickest and easiest in the end. I, however, though tired and hungry, rather preferred a new path. My wife has scolded me over and over again because I *always* insist on going home by some other route; and even though former experience has resulted in my getting lost, finding bridges gone, getting the buggy muddy, and things of that sort, she says experience *with me* does not seem to amount to any thing. I am up to the same old trick whenever I get five miles or more from home. I saw an opening through the rocky cliffs, right ahead of that horse and buggy, and into it I pushed, with my photographs in my hand. Pretty soon I had more climbing over the rocks than I had counted on; but I consoled myself by thinking it must be pretty soon down hill instead of up. Yes, it was down hill, but such a down hill as I never saw before. I pushed ahead until I began to fear I should fall into a chasm or be killed on the points of the jagged rocks below me; and then my imagination began picturing GLEANINGS dressed in crape, and all its readers saddened by the intelligence that its editor had been found crushed to death at the bottom of a precipice. So I got back to the beaten road, and, as soon as I could, made for the railway track.

What a boon is a railway track, even to a footsore and weary traveler! I had been saying to myself, that, if I just got on the railway track there would be no more up hill and down hill. But I soon had experience of this queer optical illusion that I have mentioned before, as the effect of the mountains; namely, you are sure you are going *down hill* when in reality you are on the up grade. I looked ahead on the track, and rejoiced at the prospect of seeing a place where it was so much down hill that I could easily run clear down to the town; but when I got there I could hardly believe my senses. It seemed to me as if some evil sprite from the Garden of the Gods were pulling and tugging at my coat-tails, and trying to pull me up hill backward. It seemed so unreal, that I turned square round and walked the other way. Would you believe it?—it was a great deal easier walking up hill (at least my senses said it was up hill) than to go down hill toward the town! I looked around for a stream of water. Sure enough! I felt like the woman who said, "There, it is just as I expected, and I *always* thought it would be." That contrary stream of water was running up hill, just as plain as the nose on your face. It seemed to be laughing and giggling to think I was such a "greeny." By and by, however, I reached my hotel; and my good friend who presides at the table had saved out an extra nice dinner for me. It was then only just half-past twelve o'clock.

Does some one wonder what all this story has to do with the text at the head of our talk to-day? Well, friends, it is this: Great multitudes are thronging Manitou, especially during the hot weather of summer. If they come here they put up at expensive

hotels, and then pay great prices for liveries to visit these things I have told you about. They do this to worship God through his works, some of them say. Now, they come here for enjoyment and recreation, and in order to get the very greatest amount of enjoyment out of a certain sum of money or for a certain number of days or weeks, and they resort to various artifices to enhance the attraction the place already possesses. Expensive hotels furnish costly viands; and the advertisements of their wonderful springs unblushingly recommend Manitou spring-water, combined with intoxicating liquors; and a good many people when they go out to enjoy nature must have a bottle of intoxicants along with them. I have sometimes wondered *why* one who loved whisky could not get intoxicated just as well somewhere out of sight as to go to a picnic or excursion, or on a trip to some noted watering-place. Many must have a cigar when they are looking at the mountains, waterfalls, or nature's caverns. Stumps of cigars are scattered quite freely all through the Garden of the Gods. I am told, also, that the livery-stables do an immense business on God's holy day. Now, then, friends, with the above thought in mind let us read our text:

As I passed by I beheld an altar with this inscription: TO THE UNKNOWN GOD. Whom therefore ye ignorantly worship, him declare I unto you.

Now, let me tell you as Paul told the people of Athens in olden time, "Him therefore whom ye ignorantly worship, declare I unto you." I doubt whether any tourist ever had more real enjoyment in Manitou than I found. But I found it a little unexpectedly. It commenced in God's holy temple, among Christian people, in the house of worship. You have heard my simple story, which I have told as honestly and truthfully as I knew how. Now, did any one, when under the influence of the narcotic fumes of tobacco, or through the intoxication of strong drink, or even by the expenditure of vast sums of money, ever find the happiness that I have found? Did any Sabbath-breaker ever enjoy himself so honestly and thoroughly as I have done during this Monday forenoon I have told you about? Perhaps it is true that we are all seeking enjoyment, myself among the rest; but has not Paul got it about right when he says, "Whom therefore ye ignorantly worship, him declare I unto you"? The Bible tells us, "*Great peace* have they that love thy law." My testimony is, that it is true, every word of it, and there is no peace in the whole wide universe to be compared with that which comes to the faithful, honest, earnest follower of Christ Jesus.

A VISIT TO BEE-CELLARS IN NORTHERN OHIO.

ERNEST OFF ON A RAMBLE—CONTINUED.

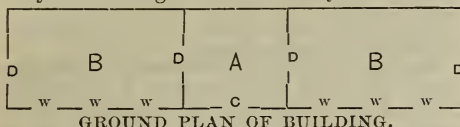
THE topic of our conversation gradually merged into the wintering question. Of course, I asked Mr. Boardman a great many questions about the repository. To talk more understandingly we went out to look it over. Having

taken along my camera, I was prepared to take some views, and I herewith present you an outside view of the building, looking from the southeast.



BOARDMAN'S HOME WINTER-REPOSITORY.

This is double-walled, 50 x 12 feet, one story, with walls 14 inches thick. It is divided into two compartments, each of which is connected with an entryway 10x10 in the center of the building; consequently to enter the building we enter by a door at C in the diagram, not shown in cut. If desirable the door can be closed after us, and we can then enter the doors from the small entryway. The diagram below is my recollection



of the plan of the building. A is the entryway; B B the compartments; C the doorway to the entry; and D D, etc., are doors to the compartments B B, from each end of the building. W, W, W, etc., are windows, hinged in the middle in such a way that the window can be revolved to a horizontal plane, so as to allow the bees to escape. As we approached the structure, I said, "I notice that the door is open."

"It has been such an open winter that I have been obliged to lower the temperature by letting in the outside air. Besides, there are more colonies in the repository than I should prefer to have for such an open winter as the present one."

"How many colonies have you in there now?"

"I have 70 in one compartment and 100 in the other. In continuous cold weather the 100 would have been about right. But, I find that from 75 to 80 colonies in each compartment average best, all things considered. During the past winter, the compartment having the 70 did better than the one having the 100. During a severe winter the results might have been reversed."

"I suppose, it will not be possible to get a photographic view inside; that is, it will not be advisable to let in sufficient light to enable me to take a picture."

"Oh, yes! I think there will be no trouble;" and so saying he opened the end door at D; and not only that, he opened the three windows so that it was as light as an ordinary room.

"But, aren't you afraid that this light is going to disturb your bees?"

"For the length of time you require, it will do no harm."

Stationing myself at the end door D, I poised the camera and took the view shown below.



AN INSIDE VIEW OF BOARDMAN'S WINTER REPOSITORY, SHOWING FRONT ROW OF HIVES.

As Mr. Boardman has already explained in one of his articles, the bottom-boards are left on their permanent stands, and the hives, as you will notice by the engraving, are piled up in such a way that the bottom of one hive comes directly over the opening between the two below. Instead of giving full-width entrance, as most bee keepers do who winter in repositories, he gives them the benefit of a large portion of the bottom of the hive. To the stronger colonies he gives more bottom space; to the weaker he gives less. On the average there is an opening at the bottom of each hive, 4 inches wide, and the full length or width of the hive. He does not then give them the full bottom, as I had formerly supposed, and as perhaps some of the rest of the readers likewise understood.

You will notice that friend Boardman dispenses with all stringers, shelving, or any other support to hold the colonies in the repository. They are simply piled up about 4 inches apart, one upon the other, break-joint fashion.

"Now, then, friend Boardman, Mr. Newman said he did not see how you could carry hives about without bottom-boards, and yet not have the bees dropping out and flying out to make the job any thing but pleasant; and, what is more, I do not see how you do it myself."

"Why, easy enough," said my friend. Going to one of the hives (they are cleated clear around at the top, you will notice, the cover resting telescopic fashion on this cleat) he grasped its diagonally opposite corners. Leaning backward a little he let the edge of the hive bear against his person, carried the hive to the other end of the repository, set it down, took it up and put it back. He did likewise with a number of other colonies. Each one he held up, turning it up so that I could see for myself the condition of the bees, and how they apparently regarded such kind of handling,

While it looked real easy I could not be content until I tried it too.

"To prevent the bees flying out when about to remove them to their winter quarters. I am particular," he said "not to jar the hive unnecessarily, and then I prefer to have the weather just cool enough at the time so that the bees cluster a little closer than usual.

"You see," he continued, "I letter each row in the apiary, and number each individual stand. Now, when I get ready to carry the bees out I take the first hive I come to, which, in this case, proves to be F 18. Of course, I know where the F row is; and 18 I know to be somewhere about the middle of the row; and with the hive in this fashion" (holding it in the manner I have before explained) "I take a bee-line to the bottom-board having the same marking as the hive."

"But," I said, "do you think it makes any great difference as to where the colonies are put?"

"Not much, but it does some; and if I can deposit each colony where it was last fall, just as easily as not, I very much prefer to do so rather than to set them out haphazard. There is then no confusion among the bees when they take their first flight; for some old bees will be sure to know where their old stand used to be."

"I want to know what sort of a cover you put over the frames in winter."

"All the bees have is the regular hive-cover, and this they usually glue down tight; that is, I put the bees into the repository just as I find them on their summer stands, after I have satisfied myself as to their strength and amount of stores."

Now, perhaps some of our readers will begin to wonder whether those bees, during all this time when the repository was lighted as light as any ordinary room, did not become more or less disturbed, and fly out. I expected to see them fly out a great deal more than they did; but only here and there a bee would start out from its hive, and strike for outdoors. Then I said to Mr. Boardman, "You would not like to leave this compartment lighted up like this all day would you?"

"No, sir; but for a short time it does no particular harm. The few bees that fly out are old ones, rather feeble, and are not of much use to the colony. My colonies have been rearing brood quite heavily, and there is a large force of younger bees to take their place."

Glancing down to the floor (concrete cement) I noticed there were a good many dead bees. In some places, perhaps they were an inch or so deep.

"Now, it seems to me you have got a good many more dead bees as the result of your indoor wintering than we have from our chaff hives, on their summer stands."

"Yes; but," said he, "I think you will find that the bees fly out from the chaff hives in the same way. These, never returning, are lost sight of, and of course do not figure very largely in the eyes of the bee-keeper, on the death-list."

While I admitted this, it did seem to me

there were more, perhaps, than we usually lose in that way on summer stands. I say "seem," because I am not sure about this.

The dinner-hour approaching, Mr. Boardman closed up the windows, darkened them, and closed all openings except the door to the entryway A, shown in the diagram above. As we stood before the building I said to Mr. Boardman, "It is not yet quite clear in my mind whether you open that door to give ventilation or to lower the temperature, or to do both."

"Bottom ventilation to the *hive* is all that I regard as important. I open the door simply to lower the temperature of the repository."

"But," I said, "don't you have a sub-earth ventilator of some kind to the building?"

"I do not see what need I have of one. As I only want to lower the temperature, I can do it by a door or window a little better, perhaps, than to let the air become warmed under ground a little before entering the compartment."

As we were entering the house, I told Mr. Boardman that I should like to take the noon train.

"Oh, no!" said my host. "You had better take the evening train."

Having enjoyed my visit so far, it did not take very much persuasion on his part and that of his good wife to induce me to remain over a little longer. Besides, as he had promised that he would take me out to his out-apiaries I did not feel like resisting very hard. Accordingly, after dinner we went out to the barn, where Mr. Boardman had three horses, one of them being a family horse, and the other two devoted exclusively to the bees, in going to and from the out-apiaries. Very soon we were on our way, on a brisk trot, to one of his east apiaries. After going about a mile and a half we came to a piece of land belonging to Mr. Boardman. An old schoolhouse on this plot of ground had been converted into a winter repository. Like the one at home, it was an up-ground structure. The walls were 14 inches thick, and frost-proof. This building had only one compartment, which communicated with an entryway, and the latter to the outside. My friend then brought something like a dozen colonies, selected at random, out to the light, for my inspection. They were all in most excellent condition, and the weak ones seemed to be doing about as well as the strong ones. As before, I noticed dead bees on the floor, but not to the extent that they seemed to be in the winter repository at home. After closing the building we started for an out-apiary some two or three miles further east. Of course, we talked all the way. I asked him if he preferred up-ground repositories rather than a good cellar.

"I prefer them simply as a matter of convenience," he said, "in carrying bees in and out. I do not know that the bees will winter any better in one than in the other. We are now going to one of my bee-cellars under a farmhouse, where I think you will find the bees wintering as well as in either of the other repositories."

In a short time we arrived at the place in question.

"This cellar," said Mr. Boardman, as he opened the door, "is one that I partitioned off."

As before, Mr. Boardman and I examined the colonies at random, and found them to be in good condition.

"Now," said he, "here is one colony that I put in by way of experiment. I do not know how they will winter. It was very weak, and I thought I would put it in just to see how they would winter."

Turning the hive up we could detect no signs of life. He set the hive down again and lifted up the cover, and, lo! every thing was as still as death. When I came to examine the size of the colony I was not very much surprised myself. There could not have been very many more than 200 bees, even at the outside, in the cluster; but the evidence seemed to point to the fact that they had only just died.

"Ordinarily," said my friend, "we unite such weak ones; but as a general thing we can winter weak colonies—that is, if not too weak—as well as we can strong ones." After putting the hive back in its place, he continued, "You will notice the cellar is very dry. Some bee-keepers claim that they could winter bees in a cellar 'reeking with dampness,' if only the food were right. I am not so particular about the food, but I am particular about a dry warm place."

All of Mr. Boardman's bees, as he subsequently told me, were wintered on whatever stores they happened to have in their hives. If the food is well ripened, the colony not too weak, and the cellar dry and warm, he does not worry very much over probabilities. While he can and has wintered bees on honey-dew he prefers the nectar of the flowers. As we stepped out of the repository Mr. Boardman said, "Here at this apiary I employed an inexperienced boy. I should have had more money in my pocket had I paid him the wages I did and had him stay at home. He made enough muss and trouble to more than offset all the good he did."

Mr. Boardman prefers a man grown—one with sufficient maturity of judgment to do what he is told to do.

To be Continued.

RECENT DEVELOPMENTS

CONDUCTED BY ERNEST R. ROOT.

THE DOVETAILED HIVE

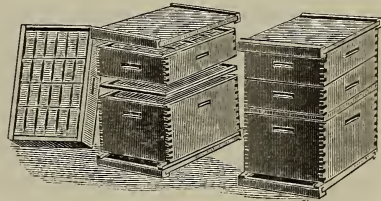
A GOOD many suggestions concerning the new hive have come in. One or two of the friends think that plain ordinary box joints will answer all practical purposes, and that the dovetailed corner is just so much more useless expense. Having perfected special machinery, the item of dovetailing is a very small one indeed in the construction of the hive, and the attendant advantages are too great to be ignored. To test the strength of a dovetailed corner we drove one hive together *without paint or nails*, and found it was nearly as rigid as a *Simplicity nailed*. Again, we drove together the dovetailed

body, having previously dipped the dove-tailed edges into some thin paint. The hive was then allowed to become thoroughly dry. To test its strength I then put my whole weight, 150 pounds, upon it in such a way that the pressure was exerted on the diagonally opposite corners. I then pounced it upon the floor, balancing myself milk-stool fashion. I presume that something over 200 pounds upon the opposite corners was exerted before I could hear any thing crack. Mind you, all this was *without a single nail*. But on account of the daubiness of paint, our man prefers to nail them together and then cross-nail. It is impossible to cross-nail an ordinary box corner—that is, where one board simply laps across another. A cross-nail joint is very much superior in point of strength and durability to the plain box corner.

There are some people who will be sure to get a hive together wrong if there is a possibility of getting it so. For instance, with a box or lap joint they will lap the end across the end of the side, or vice versa, when the opposite is intended. Carelessness in this respect results in the wrong inside dimensions of the hive as a matter of course. With the *Simplicity* or with the dovetailed corner, such a thing is impossible. You may say that a man of ordinary common sense ought not to do such a thing. Some very foolish blunders are made, as we know from experience, by some of our customers.

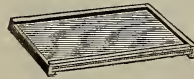
If there is any warp in a side or end, the dovetail, when driven together, will take it out, and prevent any further trouble from that source. No, sir, the dovetailed corner is considerably better than a box joint.

As announced in our last issue, I herewith present the modified engraving of the Dovetailed hive as we now make it.



THE DOVETAILED HIVE.

The principal change noticeable on the hive will be the changing of the bee-space to the top of the brood-frames, instead of at the bottom as before announced. You will notice what a good-sized entrance we allow. By the accompanying wood-engraving you will see the construction of the bottom-



BOTTOM-BOARD.

board. It is simply a cover-board, hardly good enough to be used for a cover, cleated at both ends like a cover, with a quarter-inch strip nailed on each of its two sides. One of the end cleats is leveled down, so to speak, to allow an entrance-way. This bottom-board can be used for a cover, but the cover can not be used very well as a bottom-board. In general, the construction of the hive is now such that, in whatever combination it may be made, a

bee-space will always be between each separate compartment; and if desired, the honey-board may be omitted, although I should never advise it.

Some of the good friends think we are making a mistake to leave out the tin rabbets. The new hive is intended for comb honey and not for queen-rearing. Where the frames are to be handled often, I would recommend using the Simplicity hive with the tin rabbets.

SECTION-HOLDERS.

There has been a large demand in the last few days for the Dovetailed hive; and with scarcely an exception the section-holder arrangement for surplus is chosen. For the new hive I feel quite certain that it is the better arrangement, although personal experience this summer may modify my views.

Right here I will make an extract from a letter of our friend H. L. Jeffrey:

Those frames for the sections will do two things for the boxes; first, keep them clean, and save, in time of cleaning, more than the cost of the frames. Second, by keeping the outer end of the sections of a higher temperature than with only one thickness of wood, and getting those sections filled out more like the center ones, flush with the edge of the section, the same result will be found by making your crates with a division-board inside, with an $\frac{1}{8}$ -inch lag strip to give the section more space, and keep up the evenness of the heat. That is what 10 years' use of double sides has shown to be true. Mr. Alban Ferriss has used those topless section frames for years, and so have a score of others that I know of. From what I have used of a similar fixture, and seen by a score of others use, I am sure you are putting out the best thing that you have had yet, although it is a new combination to the public, of old things.

H. L. JEFFREY.

Marble Dale, Ct.

You will notice that Mr. Jeffrey says that Mr. Ferriss and a score of others have used these frames and like them; and he, Mr. Jeffrey, thinks we are putting out the best thing that we have ever before advertised.

I also make an extract from our friend Mr. Stachelhausen, who, it will be remembered, produced 11,000 pounds of comb honey last year, when a great many others failed. He says:

The super is ingeniously constructed, and the section-holder seems to me to be a noble arrangement.

Our section-holder super-shells are just $4\frac{1}{2}$ inches deep and $18\frac{1}{2}$ inches long, inside measure, and this is too deep and too long to accommodate $4\frac{1}{2}$ sections; but by a little calculation you will see that it is just right for a T super to accommodate sections $4\frac{1}{2}$ square, $11\frac{1}{8}$ inches wide, which we regularly keep in stock. I mention this fact, because some complain that the $4\frac{1}{2}$ sections are too small; and while I would not advocate changing to the larger size of section, yet if the purchaser adopts the section-holder arrangement he can easily convert it into a T super by using the $4\frac{1}{2}$ sections, as stated; but if he orders the T-super arrangement he can not change it to any thing else.

For those who desire to use the T super and $4\frac{1}{2}$ sections, we make the ends thicker and the holder-shell $4\frac{1}{2}$ inches deep.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT,
EDITOR AND PUBLISHER,
MEDINA, OHIO.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, APR. 15, 1889.

Thou shalt love the Lord thy God with all thy heart, and with all thy soul, and with all thy mind, and with all thy strength: this is the first commandment.—MARK 12:30.

CAPTAIN HETHERINGTON'S ARMY LIFE.

In another column will be found an exceedingly interesting account of the army life of that bee-keeper and soldier, Captain J. E. Hetherington. As one who manages *successfully* some 3000 colonies, we extend to him our hearty congratulations; and as a soldier, we feel sure that the whole bee-keeping fraternity may well feel *proud* of him, whether North or South.

THE VIRGIN-QUEEN TRAFFIC.

The following, from the *Review* for March 10th, is so exactly in line with our opinion and experience, that we think best to place it before our readers:

Mr. Jones favors the traffic in virgin queens. That they can be furnished very cheaply, there is no question; but that they are difficult to introduce, we know from experience. A newly hatched queen is easily introduced. As the hours go by, the probabilities of acceptance are lessened. With us, the percentage of loss has been great when the queens were three or four days old. Then there is the risk of loss in mating; and, unless the locality of the purchaser can furnish excellent drones, the queens will find undesirable mates; and as prepotency is on the side of the male, there will be little "value received."

IS THERE A BETTER BAKING POTATO THAN THE SNOWFLAKE?

You may remember that, on page 191, I asked for samples of the best baking potatoes known. Well, I received from George Ebell, of Baker City, Oregon, four Early Rose potatoes, by express. The four potatoes weighed 8 pounds. They were very good, but hardly equal in quality to the Snowflake. He writes as follows:

I raised them on friend Terry's plan. I have several thousand pounds as large as the sample sent. I held 50 pounds in one arm.

Baker City, Oregon, March 23, 1889.

GEORGE EBELL.

Peter Henderson's Early Puritan comes so near the Snowflake that it might almost be said to equal it; and as it is said to be as early as the earliest, and as productive as any of them, we are inclined to consider it an acquisition. We are now planting it, largely with a view of furnishing seed to our subscribers next year.

THE EDITORIAL "I" IN GLEANINGS.

I SUPPOSE that most of our readers are aware that the coarse print on our pages is all written either by Ernest or by A. I. Root. Well, now, although Ernest and A. I. agree pretty nearly on most points, it begins to be apparent that our opinions do not always coincide exactly. The same is true in regard to the A B C book. A large part of the last edition was written by Ernest himself; and if you should find that I express an opinion in one place and Ernest gives a conflicting opinion somewhere else, please do not quote it as an illustration of A. I. Root's inconsistency. In many things, especially those pertaining to the bees, Ernest has had

more experience at the present time than I have had; and, in fact, when some one comes to me for an opinion, I very often turn him over to Ernest because I have more confidence in his decision than I should have in my own. The matter of gardening and raising crops is, however, more especially my province.

CAPTAIN HETHERINGTON'S LOSS.

Just as we go to press, the following sad intelligence comes to hand:

The readers of GLEANINGS will deeply sympathize with Capt. Hetherington and wife in the loss of their youngest son, John Edwin, who died April 3d, aged 4 years and 3 months. Although so young, many had observed that his remarkable intellectual development, together with an unusual degree of self-reliance and energy, gave promise of a life of great usefulness.

Starkville, N. Y., April 9, 1889.

P. H. ELWOOD.

We extend our sincere sympathy to the captain and his wife.

ORANGE-BLOSSOM HONEY; THE FIRST EXTRACTED HONEY OF THE SEASON.

We are in receipt of a sample from Florida, with the following letter:

MR. ROOT:—We extracted our first honey March 21, taking out five gallons of mixed honey, fair and good. Monday, April 1, we extracted again, and got 20 gallons of as fine orange-blossom honey as could be desired, a sample of which I send you. We will extract again next Monday, and expect to get 20 gallons more than of the same honey, and that will close orange-blossom for this year. We have 20 colonies. If we have no disappointment, the season will last 3 months. Our bees are on the St. John's River. JOHN GRAYCRAFT.

Altosna, Fla., Apr. 3, 1889.

I am happy to say that the sample of orange-blossom honey sent us is perfectly delicious, and ought to bring as good a price as any of our clover or basswood. I think I should place it at the head. The flavor is quite similar to that furnished by the Baldensperger Bros., of Jaffa, Syria, noticed in these pages some two or three years ago. What will you take for a barrel of it?

TO WHOM IT MAY CONCERN.

We have of late been receiving so many communications from people who have invested money in a patent-right pruner, claiming to have purchased the territory of our agent or agents, that we wish it distinctly understood that we have no agents, and never did have, for selling rights for any patent. Whoever claims to be our agent, or to be authorized by us to sell rights for any pruner, is a humbug and a swindler, and we hope that all good men will assist in putting down this fraud. In some cases poor widows have scraped up their scanty earnings to pay for a county right, only to be informed, when they write to us, that their money is worse than thrown away.

THE ILLUSTRATED HOME JOURNAL.

The above is the title of a monthly periodical published by T. G. Newman & Son, editors and proprietors of the *American Bee Journal*. This new journal was formerly known as the *Chicago Illustrated Journal*. After three volumes were issued, it was voluntarily suspended for a time. An auspicious time having arrived, the editors decided to renew its publication, changing its name slightly as above. It is printed on nice calendered paper, and contains 36 pages, including a tinted cover. It is well illustrated, and the initial article is entitled "One Hundred Years a Nation," by the editor. Mr. Newman is a man acquainted with men and with the times, and the article is comprehensive and complete. We wish the publishers every success. Those of our readers who would like to see

how good an illustrated home journal can be had for \$1.50 per annum can obtain a sample copy by addressing T. G. Newman & Son, 923 West Madison St., Chicago, Ill.

LOOK OUT FOR HIM.

J. H. BREWER, physician and surgeon, Jackson, Neb., wrote us as follows, Oct. 11, 1888:

Please send me one copy of your A B C of Bee Culture and one of your best bee-smokers, by express, C. O. D. J. H. BREWER.

Jackson, Neb., Oct. 11, 1888.

Judging that the want of the goods was probably more than the worth of them, we sent them right along with above instructions. When notified they were not taken from the office, we wrote the doctor; and as he did not reply we wrote again, telling him we should be \$1.05 out of pocket if he did not take the things from the express office according to promise, the above amount being the express charges both ways. We even wrote the third time, telling him we had his plain order in black and white, with his signature at the bottom; also telling him that we should feel it our duty to caution others among the bee-fraternity against trusting him in a similar way, if he did not respond. We also took pains to find out that he was in his usual good health, and abundantly able to answer letters, even if he could not raise the small sum of \$1.05. As he makes no reply, we publish him as above.

A BOOK ON BUCKWHEAT WANTED.

SINCE the advent of the new Japanese buckwheat, the industry has assumed such proportions that it is quite important that we have the fullest information in regard to preparing the ground, sowing the seed, use of fertilizers, harvesting, cleaning, and, in short, every thing connected with the raising of buckwheat. The matter of getting another crop in, after something else has come off, is also of much moment. My experience with the articles on sweet potatoes has opened my eyes to the fact that the readers of GLEANINGS are able to furnish a valuable treatise on almost any new industry. Now, friends, please tell us what you know about buckwheat, and we will have a "buckwheat issue" some time before it is time to sow the seed. I will pay for your communications what I think I can afford to, as I did with the papers on sweet potatoes. We want all the valuable facts and hints we can get. If some of them do not occupy more than ten lines, all right. Let us have them, and we will pay you *something* for your trouble. Now, please remember that we want facts from actual experience, and experiment rather than flowery essays. If some one of our readers has raised buckwheat to the extent of a thousand bushels or more in a season, we should like to have a pretty comprehensive article from him; but as there will necessarily be much repetition, most of you had better make yourselves as brief and comprehensive as you can. We want the facts boiled down. Where one raises only a little patch, the question comes up about harvesting. He can not afford to get a thrashing-machine. Shall he then load it on wagons and draw it to some machine already set up? or shall he thrash it with a flail? Has anybody yet raised two crops in one season? and does it yield grain in *any* locality when sown early in the spring, as soon as frost is out of the way? How about the use of chemical fertilizers? Shall we sow it broadcast, or with a seed-drill, etc.?

SPECIAL NOTICES.

HENDERSON'S EARLY PURITAN POTATO.

We have just purchased a barrel of these to plant, and we will furnish eyes, by mail, at the following prices to those who want them: 10 eyes, 15 cts.; 100, 75 cts.

EARLY OHIO POTATOES FOR PLANTING, AT A BARGAIN.

While our stock lasts we will furnish Early Ohio potatoes at the same prices as Beauty of Hebron and Burbank were offered last month; namely, 50 cents per bushel, or \$1.25 for a barrel of three bushels.

EXCELSIOR FLAT DUTCH CABBAGE.

When we started out with our seed catalogue, you know we decided to have only a few of each kind of vegetable. I think we had at first four kinds of cabbage. Our list has now, however, run up to seven, and it does not seem as if we could drop any of them. Worse still, there are several complaints that we have not in our list a late flat Dutch cabbage; we have therefore added Excelsior Flat Dutch. Five cents per packet; 15 cts. per ounce, or \$2.00 per pound.

FIGWORT, OR SIMPSON HONEY-PLANT ROOTS.

In consequence of my absence in California last season, our rich market-gardening ground was not plowed in the fall, and, as a result, great numbers of figwort plants came up and became strong enough to winter over. If orders are sent in at once we will furnish these roots as follows: 10 roots, 15 cts.; 100, 75 cts.; 1000, \$5.00. If wanted by mail, add 8 cts. for 10, or 50 cts. for 100, postpaid. They are just as sure to grow as a potato or horseradish root, and will blossom profusely this present season.

IGNOTUM TOMATOES.

It is probably now too late for most of you to sow the seed and get plants to bear a crop. Now, we can not give away the plants as we have done with the seeds, but we will send you three nice plants, packed in a wooden box, for 10 cents; or 10 for 25 cents, by mail, postpaid. By express the price will be \$2.00 per 100. We have now in our greenhouses a splendid lot of vegetable-plants of all kinds. For prices and particulars, see our spring catalogue of plants and seeds, mailed on application. As a sample of our ability to send plants safely long distances, see the following:

Mr. Root:—I bought ten Mikado tomato-plants of you last spring; and, to say the least, they far exceeded my most sanguine expectations. They were not wilted in the least when I received them, and I realized between four and five bushels of large, beautiful, thoroughly ripe tomatoes from the ten plants. I raised three varieties of tomatoes last year, and the Mikados were the only ones that ripened thoroughly. This year I am going to buy fifty plants of Mikado from you. Will you please let me know the price of the same?
Belmont, Wis., April 4, 1889. J. HARRIE MORRIS.

THE A B C OF CARP CULTURE.

The above book is finally ready to mail. As it is almost two years since the fore part of it was printed, it ought to be well done. Our readers will understand that a great part of it is a reprint of George Finley's book, entitled "German, or European Carp." Friend Finley accumulated material for it for three or four years, and I then paid him \$200 for the right and title to the original book, together with what he had done on a new edition. After I had worked on it for about a year I found that my many cares made it almost out of the question for me to sit down and sift the chaff from the wheat as I felt ought to be done, and I therefore put the whole thing into the hands of our good friend Dr. C. C. Miller, who gave his whole time and attention to it for several weeks. Altogether we think it contains all that is valuable up to date on carp culture. As with our other books we propose to add to it, in the way of an appendix, every thing new as it comes up. The price of the book is 35 cents; by mail, 40 cents. The original book was \$1.00, and we have made it contain double the amount of matter, and illustrated it with many fine engravings, and yet sell it at only 35 cents.

KIND WORDS FROM OUR CUSTOMERS.

Goods came to hand all O. K. Thanks for promptness. Thank you for Christmas gift, biographies. Moltke, Tenn., Jan. 14, 1889. S. L. MEDEIN.

I have two plants of your white lettuce growing, which I prize very highly. Mrs. A. A. NEEDHAM. Sorrento, Fla., Jan. 17, 1889.

The seed I got of you last year were all satisfactory; the cabbage, especially, headed uncommonly well, and is a fine quality. WM SCHWAAB. Nashotah, Wis., Feb. 16, 1889.

I am glad you are sending me GLEANINGS. I used to think I could not afford to take it, but I think I have lost a good bit by not taking it long ago. CHARLES CHANDLER. Pennsville, O., Feb. 9, 1889.

You "beat the Dutch" for promptness. The goods I ordered of you on the 9th arrived on the 12th, and in fine condition. I did not expect them before the 15th. My neighbors are well pleased with their sweepers. Accept my thanks for your promptness, also for your letter of advice. Peachville, Pa., Mar. 23, 1889. C. A. LEWIS.

MRS. HARRISON'S ORPHANS, AND THE STORY OF THE BIBLE.

The orphans enjoy the Story of the Bible very much indeed. Katie reads, while Lucy peeps over her shoulder to see the angels. The style is simple and easy, and real fascinating to young people. Peoria, Ill., Feb. 11, 1889. MRS. L. HARRISON.

I would no more think of doing without GLEANINGS than some other necessity. Your trip to California did me more good than any other description of the country I ever read, because I know you are truthful. W. MCDOUGAN. Santee Agency, Neb., Jan. 15, 1889.

I wish to congratulate the editor on the improvements made in GLEANINGS. It grows better and more interesting with each issue. I hope the editor may long continue in the good work, and be well paid for it too. Prospects are good for another year. J. B. RIGGENS. Swanton, Neb., Feb. 18, 1889.

I have received your A B C, and am proud and happy to get such a beautiful book as a present from the author. I have read most of it, and like it better than any of the other bee-books I have seen. You should be happy to be able to give so much for so little money. I have your picture and biography in the book with the others taken from GLEANINGS. J. F. MCINTYRE. Fillmore, Cal., Jan. 7, 1889.

I am very much interested in your Notes by the Way, especially that concerning David C. Cook. We have used in our Sunday-school for about 15 years, his literature. I was very much surprised at his prosperity, when I think of the difficulties he had to surmount in the way of other publishing companies, etc. We think GLEANINGS the paper any way. E. R. A. and B. BRAINARD. Postville, Ia., Jan. 21, 1889.

Mr. Root:—At a meeting of the Peoria Scientific Association held last evening, a very cordial and unanimous vote of thanks was extended to you for the beautiful and valuable volumes which found their way to the museum last week, as well as for the Feb. No. of GLEANINGS. I assure you we are deeply grateful to you for these favors. The books are of incomparable value to one who is interested in the subject of bee-culture, and I shall take pleasure in recommending them to my friends. Peoria, Ill., Feb. 9, 1889. M. LOUISE WHITE.

GLEANINGS AND THE TRAVELS.

Friend Root:—"Beeology" does not awaken the same interest with me in winter when my bees are at rest as in summer when their music is heard in every quarter; yet GLEANINGS has always been a welcome visitor at my "news-table" since I first formed its acquaintance, and especially so for the

past few months, as I read the description of your journey to the Pacific coast. I am quite familiar with the route you traveled. I took the same journey in 1882, but went much further, and did not stop till I landed on a branch of the McKenzie River, near the head waters of the Youcan.

J. F. CALLBREATH.

White Lake, N. Y., Jan. 21, 1889.

The bill of goods came to hand in fine shape, and such a handy package! I would advise all ordering small goods to have them rolled up in perforated zinc.

A. A. PARSONS.

Avon, Ind., March 18, 1889.

The seeds and cutlery I ordered of you came all right in due time. The plated knives and forks are splendid—about a third cheaper than we could get them here; and the pocket-knives are first-rate for the money. Please accept thanks.

Morristown, Ind.

MAD. TALBERT.

GLEANINGS CONSTANTLY GROWING BRIGHTER.

Notes of Travel prove very interesting reading. GLEANINGS constantly grows brighter and better. Its artistic beauty is a joy forever. Long live GLEANINGS and its energetic editor.

Gallinas, Texas, Mar. 11, 1889. W. A. MCPHAIL.

Strawberry-plants received all right. Many thanks for your promptness. I do think they are the finest-rooted plants I ever saw, and the best packed and put up. I showed them to a nurseryman, and he said he had been shipping plants a good while, but he never could put them up as those were.

Hickman, Ky., March 19, 1889.

J. O. BARNES.

While kind words are pouring in to GLEANINGS and its publisher, let me say a few words for one, a supply-dealer brought before us by the help of GLEANINGS—J. M. Jenkins, Wetumpka, Ala., a man who not only tries to satisfy his customers, but does it.

S. C. CORWIN.

Sara Sota, Fla., Feb. 28, 1889.

The new Langstroth is received; very creditable to the reviewers. Though retaining the fine flavor of the original work, all that was essential and characteristic, it has much new matter, and is up to the times, and worthy of a double star in your catalogue—a remarkable production, with all the attractiveness of a new book.

Hopkinsville, Ky., March 11, 1889.

D. F. SAVAGE.

PLEASED.

I received the goods you sent me, in good order. The Little Detective scales is a beauty, and weighs accurately. The 554 sections are good enough for me. I ordered only 500. The foundation is the best I ever saw. I want to say, also, that GLEANINGS is a welcome guest, and read with interest. Our Homes is the best of all. Leave that and the Tobacco Column out, and I don't think I would renew.

W. A. WILLIAMSON.

Friendly, W. Va., Feb. 11, 1889.

THE NOTES OF TRAVEL.

I greatly enjoy the Notes of Travel. They give me the California fever even more than I had it when I went there to spend the winter of 1885. The biographical sketches are also very entertaining. It is a pleasure to see what a number of the best bee-keepers are Christian people. The past season has not been very good. I began the season with 182 colonies in three apiaries, and secured about 2500 lbs. of honey. Though this is little, my neighboring bee-keeping friends did not do as well.

Edinburg, O., Jan. 23, 1889.

C. R. BINGHAM.

Through your kind indulgence I have enjoyed (I should have said we have enjoyed) the visits of GLEANINGS for about three-fourths of a year on tick. But I have the money now, and I herewith forward it to you. We have nearly decided notwithstanding our bees do poorly, that we can't do without GLEANINGS from other considerations—the children say, especially if you take any more California trips. We like the tone and spirit of its comments and editorials and—its sermons.

Fullerton, Neb., Jan. 20, 1889.

J. E. FAUCETT.

OUR SOLAR-WAX EXTRACTOR, AND HOW IT WORKS.

The goods ordered Jan. 18 came to hand Feb. 9, all in good shape. I couldn't eat dinner till I saw inside that wax-extractor, and then it fairly took my appetite. I couldn't rest till I saw whether it would melt wax, and so I set it out by the side of the smoke-house, and put in some old tough combs, and in a very few minutes they were melting into the nicest wax I ever saw. It astonished even the natives.

Siloam, Ark., Feb. 10, 1889.

ALLEN BAGLEY.

THAT VISIT TO CALIFORNIA.

Friend Root:—I see on page 164, that Messrs. Osburn and Gilchrist have expressed their dissatisfaction or disappointment, caused by your not making them a visit while you were in California. I do not think that you were altogether at fault, and I should not be surprised if there were many more whom you missed, making such a flying trip as you did. When you called on your humble servant he was away from home, and you drove nine miles to see him. Although we had but a two-hours' chat, yet I shall never forget it. I am glad to know that you are planning another journey, and that Mrs. Root (and Huber) are coming with you. I wish you to be sure to call and see me. This time I shall try to be "at home," and have my "Dickens curiosity shop" in a little better order, and perhaps have something more inviting than "bachelor's hall," unless you come too quickly.

W. W. BLISS.

Duarte, Cal., Mar. 19, 1889.

GLEANINGS AND ITS POLICY.

The seeds and sample squash-boxes, feeder, etc., came to hand, all right, and the express was only \$2.75, which was not more than I expected. I hope I shall get a few more subscribers for GLEANINGS, for I think it not only a good bee-paper, but a good paper to have around. In these days, when the "almighty dollar" seems to take the first and almost last place, in most people's minds, even Christians', it is very refreshing to take up a business paper that brings before the minds of its readers constantly that whatever we do should be done in the name of the Lord Jesus. To take up a fruit or bee paper that takes up a large part of its space in throwing dirt, or in private squabbles, is not edifying or profitable; and while I would express my views and opinions as distinctly and impartially as I could, I would also be willing they should do the same; and if they did knock some of the corners off my pet hive, I would not think it necessary to bite their heads off for doing so. I had begun to think, before I got hold of GLEANINGS, that most bee-men were about as waspish as their hybrids, which are not a very charitable conclusion to arrive at; but I must stop, for this is your "busy day." I generally think of you as the busy man, till it makes my head swim.

THOMAS SLACK.

Waterloo, P. Q., Mar. 18, 1889.

PRICE LISTS RECEIVED.

Since our last issue we have received price lists of queens, bees, and apian supplies in general, from the following parties, who will be glad to furnish them to applicants. Those marked with a star (*) also deal in fine poultry.

J. H. Larrabee, Larrabee's Point, Vt.

Berlin Fruit-Box Co., Berlin Heights, O.

W. E. Clark, Oriskany, N. Y.

S. W. Morrison, Oxford, Pa.

J. W. Bittenbender, Knoxville, Iowa.

J. N. Colwick, Norse, Texas.

Martin & Macy, North Manchester, Ind.*

We have just printed for Elijah Debusk, Friendship, Va., his annual list of bees and supplies.

J. W. K. SHAW & CO., Loreauville, Iberia Parish, La.

We have, ready for mailing, 100 large, light, tested Italian queens, imported mother, Sept. and Oct., 1888, rearing, very fine, at \$1.50 each. Untested, \$1.00; per doz., \$10.00. Send for circular. Money orders, New Iberia, La. 78d

In responding to this advertisement mention GLEANINGS.

STRAW BLACK GOOSE RASPB DEW BERRIES

CURRENTS and GRAPES.

ADA Large, Late, Hardy, Prolific,
Black RASPBERRY, Latest of
all in Ripening.

FIRST-CLASS PLANTS AT LOW RATES.

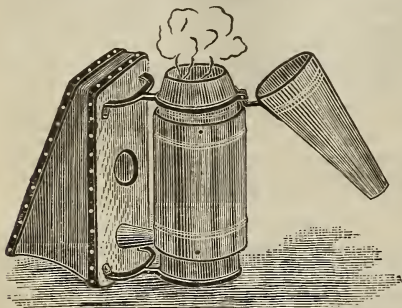
THEO. F. LONGENECKER,

Correspondence Solicited. 3tdb Dayton, Ohio.

In responding to this advertisement mention GLEANINGS.

1889. HELLO! HELLO! 1889.

How are supplies selling? You send for W. E. CLARK's illustrated price list. He is rock bottom for all supplies, and don't you forget it.



W. E. Clark's Improved Hinge-Nozzle Quinby
Smoker. The Best Smoker Made.

Oriskany, - Oneida Co., - New York
3-14db Mention Gleanings.

B. J. MILLER & CO.,

NAPPANEE, IND.,

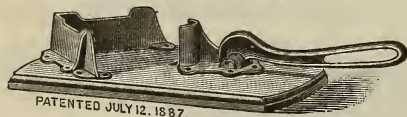
BEE - HIVES AND ITALIAN QUEENS.

4½x4½ Sections, from 500 to 3000, at \$3.50 per
1000; if you want more than that, write for prices.
Brood-frames, T-tin Cases, Foundation, and Metal
Corners. Send for price list. 1tdb

In responding to this advertisement mention GLEANINGS.

SECTION PRESS.

PRICE \$2.00.



PATENTED JULY 12, 1887.

For putting together one-piece sections. Every
section square, and a smart boy or girl can fold 100
in six minutes. Try one and you will never regret
it. Send to your supply dealer or to 5-16db

WAKEMAN & CROCKER, Lockport, N. Y.

In responding to this advertisement mention GLEANINGS.

SAVE FREIGHT.

**BUY YOUR SUPPLIES NEAR HOME AND
SAVE FREIGHT.**

We carry a complete line of Hives, Sections, Smo-
kers, Honey Extractors, etc. Our motto, good
goods and low prices. Sections in large quantities,
only \$3.25 per M. Illustrated catalogue for your
name on a postal card.

R. B. LEAHY & CO.,

3-14db Box 11. Higginsville, Mo.

In responding to this advertisement mention GLEANINGS.

**THE . BEST . HIVES
FOR THE LEAST MONEY.**

BOTH SINGLE AND DOUBLE WALLED.

If you need any hives don't fail to send for my
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